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Nata

LumCAT: NA01D020024BW

Luminaire:

Report No: 200402-B014

Voltage(V): 6.5600

Test No: 200402-C014

Current(A): 0.1620

LampCAT: OSRAM 3030 DURIS S5

Power (W): 1.0630

Lamp flux(lm): 126.4

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): 121.08

Efficiency(%): 95.82%

Lumens(lm)/Power(W): 113.90

Central intensity(cd): 334.027

Maximum intensity(cd): 334.027

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=27.0

[C90/270]Total=27.0

Field angle(10%Imax): [C0/180]Total=58.4

[C90/270]Total=58.4

Maximum s/h(1/2): C0_180=0.45 C90_270=0.45

Maximum s/h(1/4): C0_180=0.48 C90_270=0.48

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 95.82%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 93.899%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	334.027	0.000	0	.000%	.000%
1.0	333.155	0.319	0.319	.253%	.264%
2.0	329.063	0.950	1.27	.752%	1.049%
3.0	321.926	1.557	2.827	1.232%	2.335%
4.0	313.538	2.127	4.954	1.683%	4.091%
5.0	302.808	2.651	7.605	2.098%	6.281%
6.0	288.738	3.109	10.714	2.460%	8.849%
7.0	274.514	3.496	14.21	2.767%	11.736%
8.0	259.270	3.820	18.03	3.023%	14.891%
9.0	242.213	4.064	22.095	3.216%	18.248%
10.0	224.613	4.225	26.319	3.343%	21.737%
11.0	208.238	4.325	30.644	3.423%	25.309%
12.0	192.023	4.375	35.02	3.463%	28.923%
13.0	174.340	4.348	39.367	3.441%	32.514%
14.0	159.110	4.268	43.636	3.378%	36.039%
15.0	144.858	4.173	47.809	3.302%	39.485%
16.0	131.175	4.045	51.853	3.201%	42.826%
17.0	117.809	3.877	55.731	3.068%	46.028%
18.0	106.137	3.692	59.423	2.922%	49.078%
19.0	95.646	3.511	62.934	2.778%	51.977%
20.0	85.992	3.324	66.258	2.631%	54.723%
21.0	77.133	3.132	69.39	2.479%	57.310%
22.0	69.532	2.947	72.338	2.332%	59.744%
23.0	62.810	2.777	75.115	2.198%	62.037%
24.0	56.334	2.605	77.719	2.062%	64.189%
25.0	50.871	2.438	80.157	1.929%	66.202%
26.0	46.076	2.288	82.446	1.811%	68.092%
27.0	41.653	2.146	84.592	1.699%	69.865%
28.0	37.350	2.000	86.592	1.583%	71.517%
29.0	33.989	1.866	88.458	1.477%	73.058%
30.0	30.818	1.750	90.208	1.385%	74.503%
31.0	27.837	1.632	91.841	1.292%	75.851%
32.0	25.235	1.520	93.361	1.203%	77.107%
33.0	22.971	1.420	94.781	1.124%	78.280%
34.0	20.890	1.327	96.108	1.050%	79.376%
35.0	18.942	1.237	97.346	.979%	80.398%
36.0	17.367	1.156	98.502	.915%	81.353%
37.0	15.940	1.086	99.588	.860%	82.250%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	14.674	1.022	100.61	.809%	83.094%
39.0	13.465	0.960	101.57	.760%	83.887%
40.0	12.438	0.903	102.474	.715%	84.633%
41.0	11.524	0.853	103.327	.675%	85.338%
42.0	10.730	0.809	104.135	.640%	86.006%
43.0	9.956	0.766	104.902	.606%	86.639%
44.0	9.302	0.727	105.629	.575%	87.239%
45.0	8.719	0.693	106.321	.548%	87.811%
46.0	8.128	0.659	106.98	.521%	88.355%
47.0	7.629	0.627	107.607	.496%	88.873%
48.0	7.214	0.600	108.207	.475%	89.368%
49.0	6.799	0.575	108.782	.455%	89.844%
50.0	6.370	0.549	109.331	.435%	90.297%
51.0	6.005	0.524	109.855	.414%	90.730%
52.0	5.681	0.501	110.356	.397%	91.144%
53.0	5.337	0.479	110.836	.379%	91.540%
54.0	5.070	0.459	111.294	.363%	91.918%
55.0	4.795	0.440	111.735	.348%	92.282%
56.0	4.556	0.423	112.157	.334%	92.631%
57.0	4.324	0.406	112.563	.321%	92.966%
58.0	4.127	0.391	112.954	.309%	93.289%
59.0	3.923	0.376	113.33	.298%	93.600%
60.0	3.748	0.362	113.693	.287%	93.899%
61.0	3.579	0.350	114.042	.277%	94.188%
62.0	3.438	0.338	114.381	.268%	94.467%
63.0	3.284	0.327	114.708	.259%	94.737%
64.0	3.157	0.316	115.024	.250%	94.998%
65.0	3.059	0.308	115.331	.243%	95.252%
66.0	2.946	0.300	115.631	.237%	95.500%
67.0	2.848	0.291	115.922	.231%	95.741%
68.0	2.756	0.284	116.206	.225%	95.975%
69.0	2.672	0.277	116.483	.219%	96.204%
70.0	2.623	0.272	116.755	.215%	96.428%
71.0	2.545	0.267	117.022	.211%	96.649%
72.0	2.510	0.263	117.285	.208%	96.866%
73.0	2.482	0.261	117.546	.207%	97.082%
74.0	2.419	0.258	117.803	.204%	97.294%
75.0	2.391	0.254	118.058	.201%	97.504%

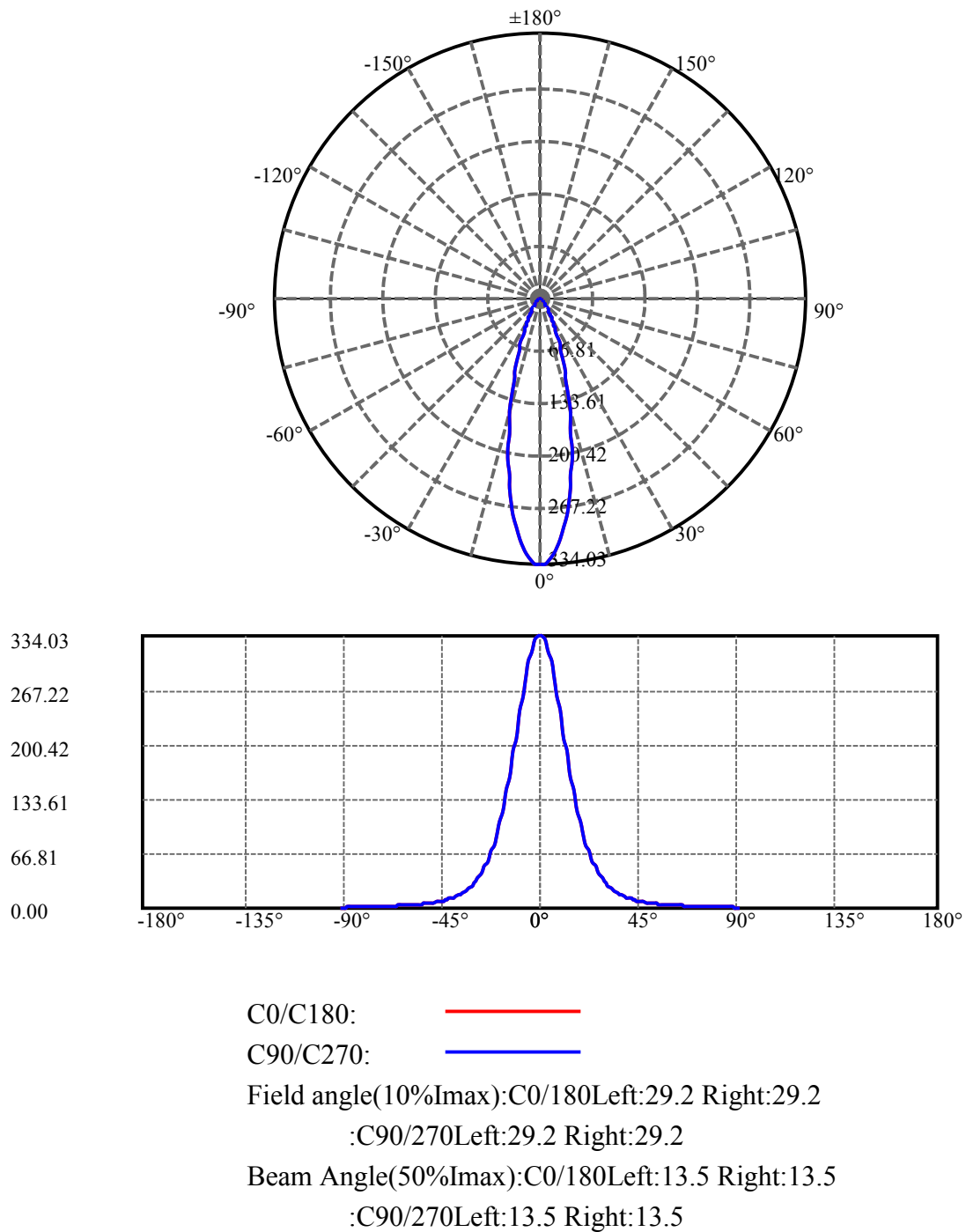
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	2.384	0.253	118.311	.201%	97.714%
77.0	2.377	0.254	118.565	.201%	97.923%
78.0	2.355	0.253	118.818	.200%	98.132%
79.0	2.341	0.252	119.07	.200%	98.341%
80.0	2.327	0.252	119.322	.199%	98.549%
81.0	2.292	0.250	119.572	.198%	98.755%
82.0	2.278	0.248	119.82	.196%	98.960%
83.0	2.229	0.245	120.065	.194%	99.162%
84.0	2.145	0.238	120.303	.189%	99.359%
85.0	1.969	0.224	120.528	.178%	99.544%
86.0	1.561	0.193	120.721	.153%	99.704%
87.0	1.076	0.144	120.865	.114%	99.823%
88.0	0.689	0.097	120.962	.077%	99.903%
89.0	0.506	0.066	121.027	.052%	99.957%
90.0	0.450	0.052	121.079	.041%	100.000%

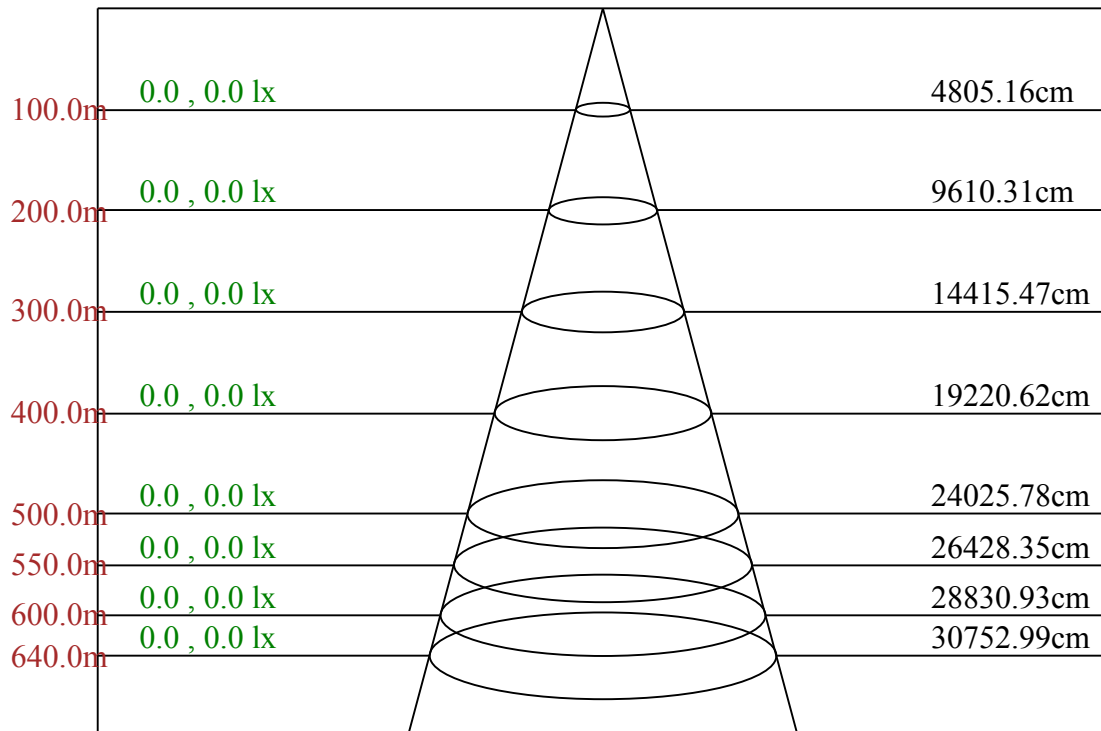
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	90.21	71.39%	74.50%
0-40	102.47	81.10%	84.63%
0-60	113.69	89.98%	93.90%
0-90	121.03	95.78%	99.96%
0-120	121.03	95.78%	99.96%
0-180	121.08	95.82%	100.00%
60-90	7.70	6.09%	6.36%
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%
0-34.61	96.86	76.66%	80.00%

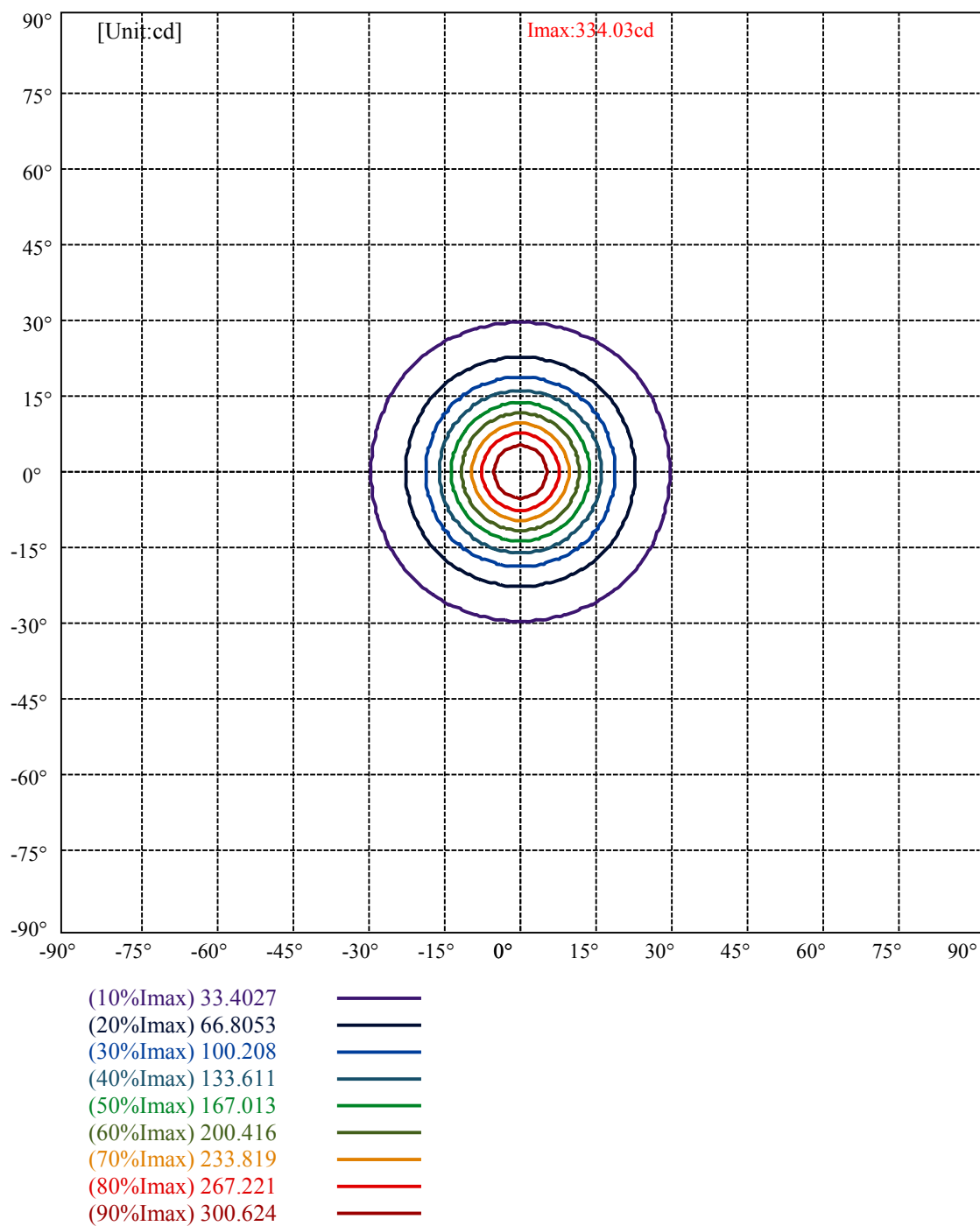
ZONAL LUMEN SUMMARY

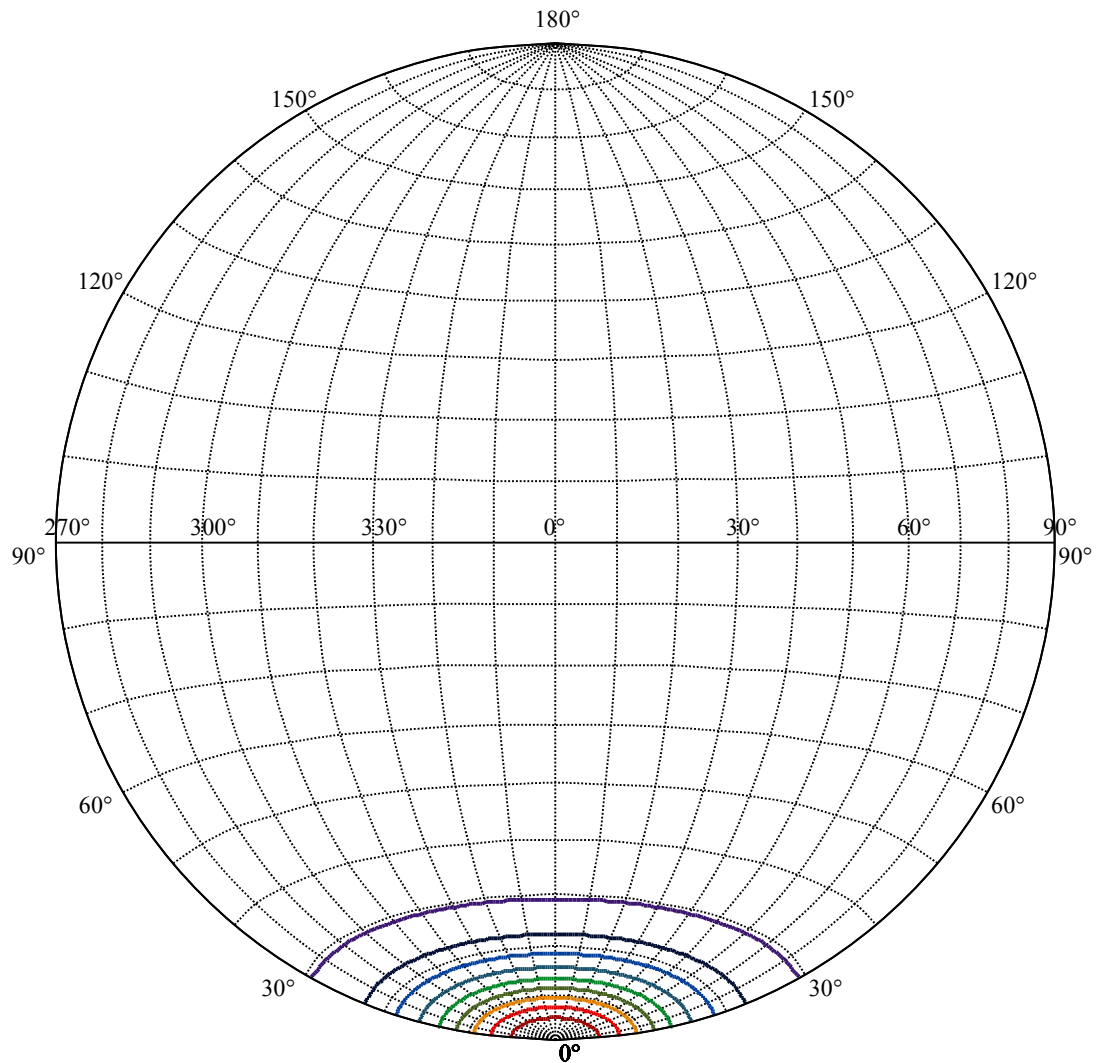
0-10	26.32
10-20	39.94
20-30	23.95
30-40	12.27
40-50	6.86
50-60	4.36
60-70	3.06
70-80	2.57
80-90	1.70
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00





Max , Ave Beam angle of C0 plane 27.02



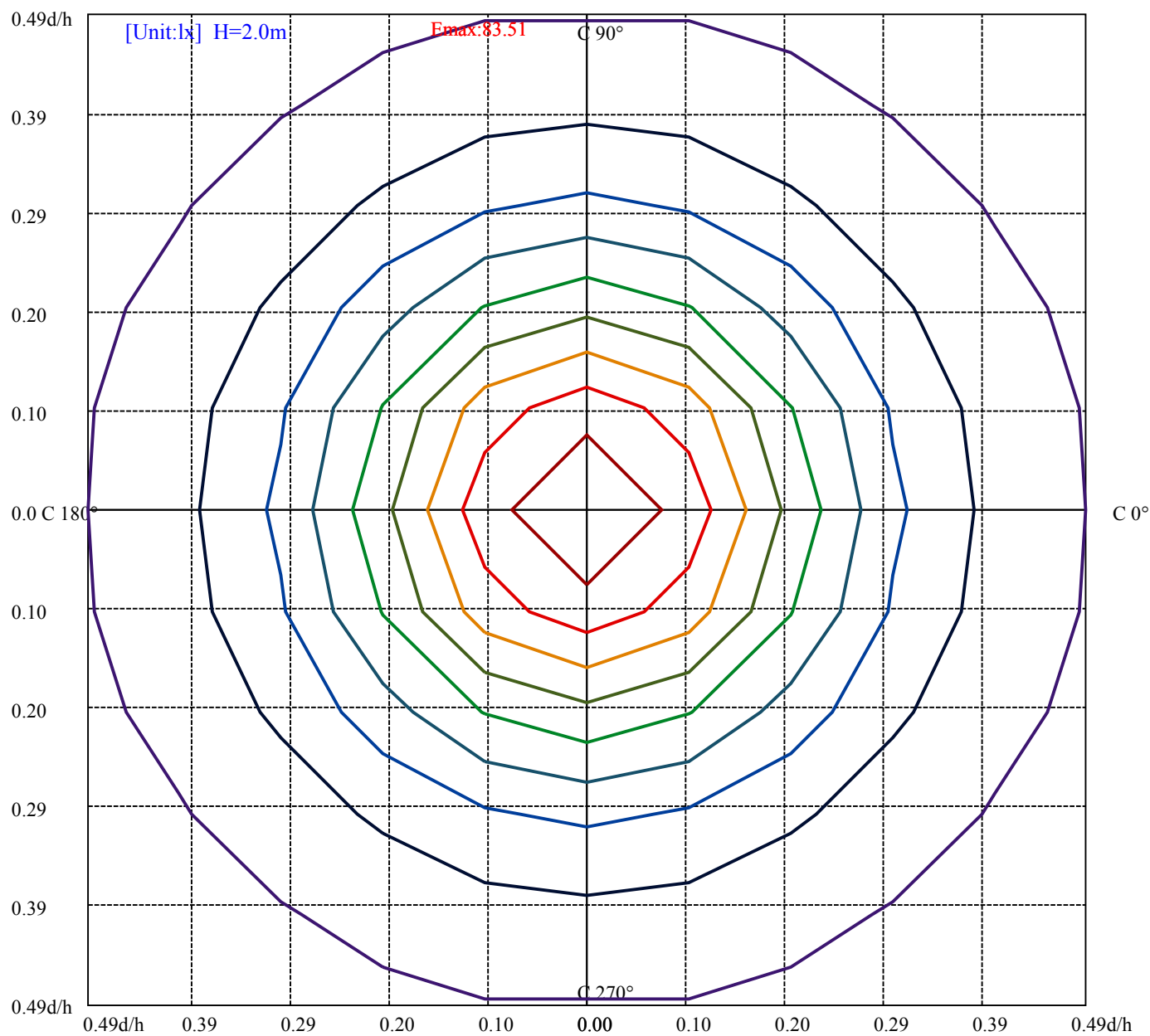


House

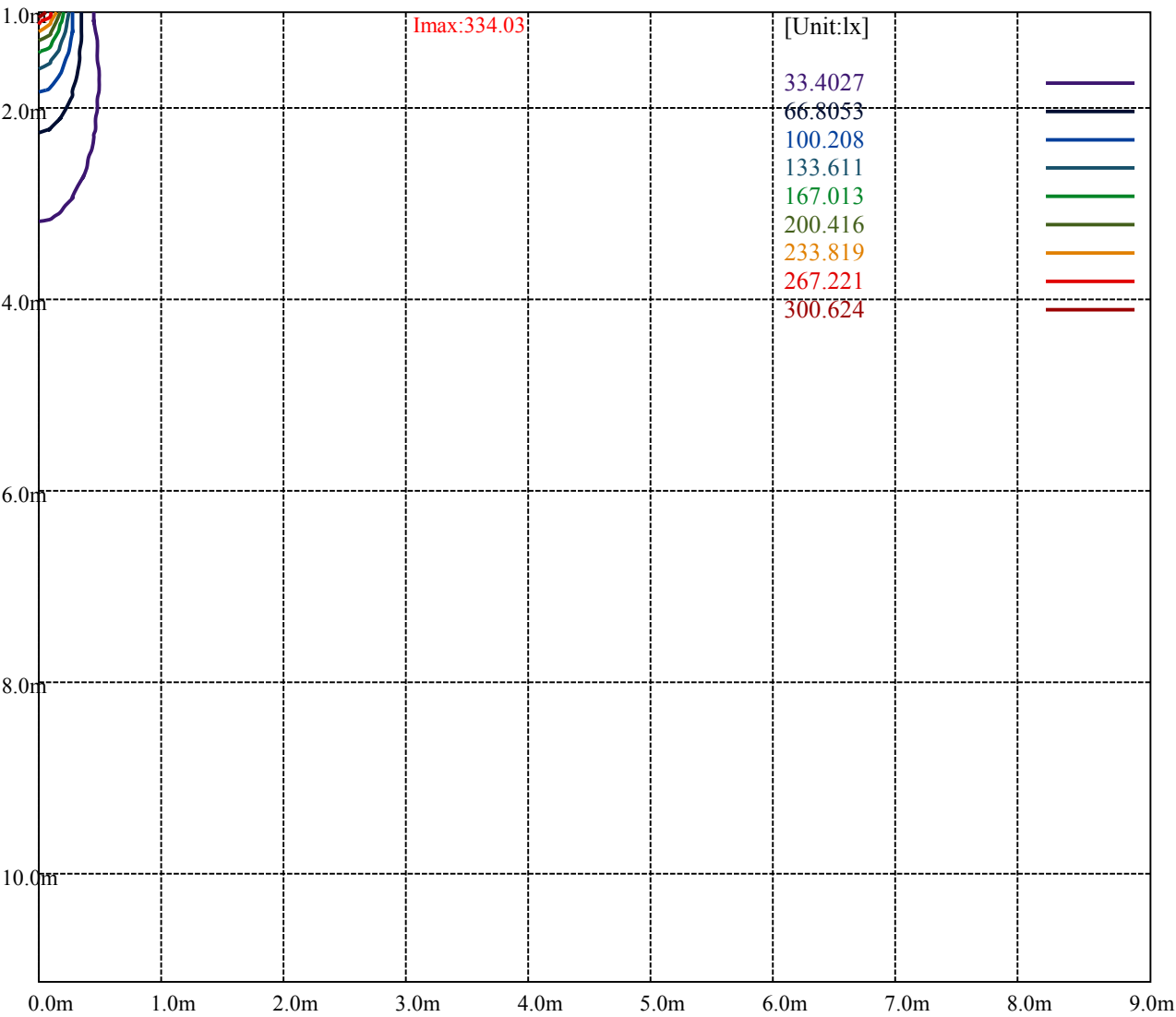
[Unit:cd]

Road

Imax:334.03	
(10%Imax) 33.4027	
(20%Imax) 66.8053	
(30%Imax) 100.208	
(40%Imax) 133.611	
(50%Imax) 167.013	
(60%Imax) 200.416	
(70%Imax) 233.819	
(80%Imax) 267.221	
(90%Imax) 300.624	



(10%Emax)	8.35065	
(20%Emax)	16.70132	
(30%Emax)	25.052	
(40%Emax)	33.40275	
(50%Emax)	41.75325	
(60%Emax)	50.104	
(70%Emax)	58.4545	
(80%Emax)	66.80525	
(90%Emax)	75.156	



Luminance Table

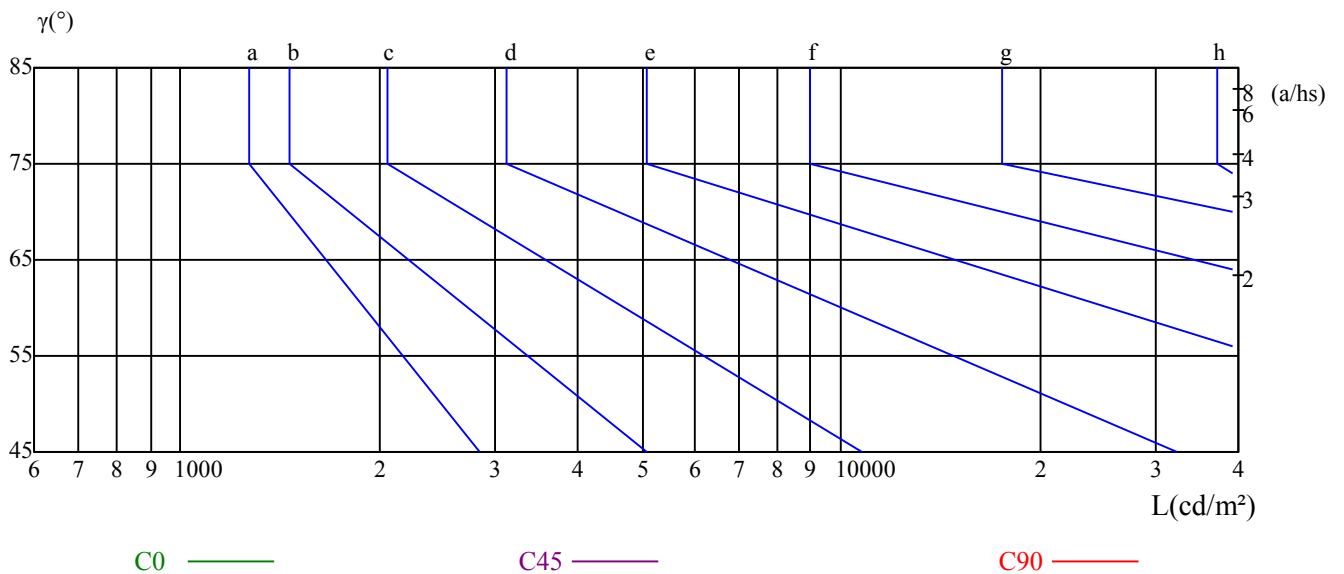
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

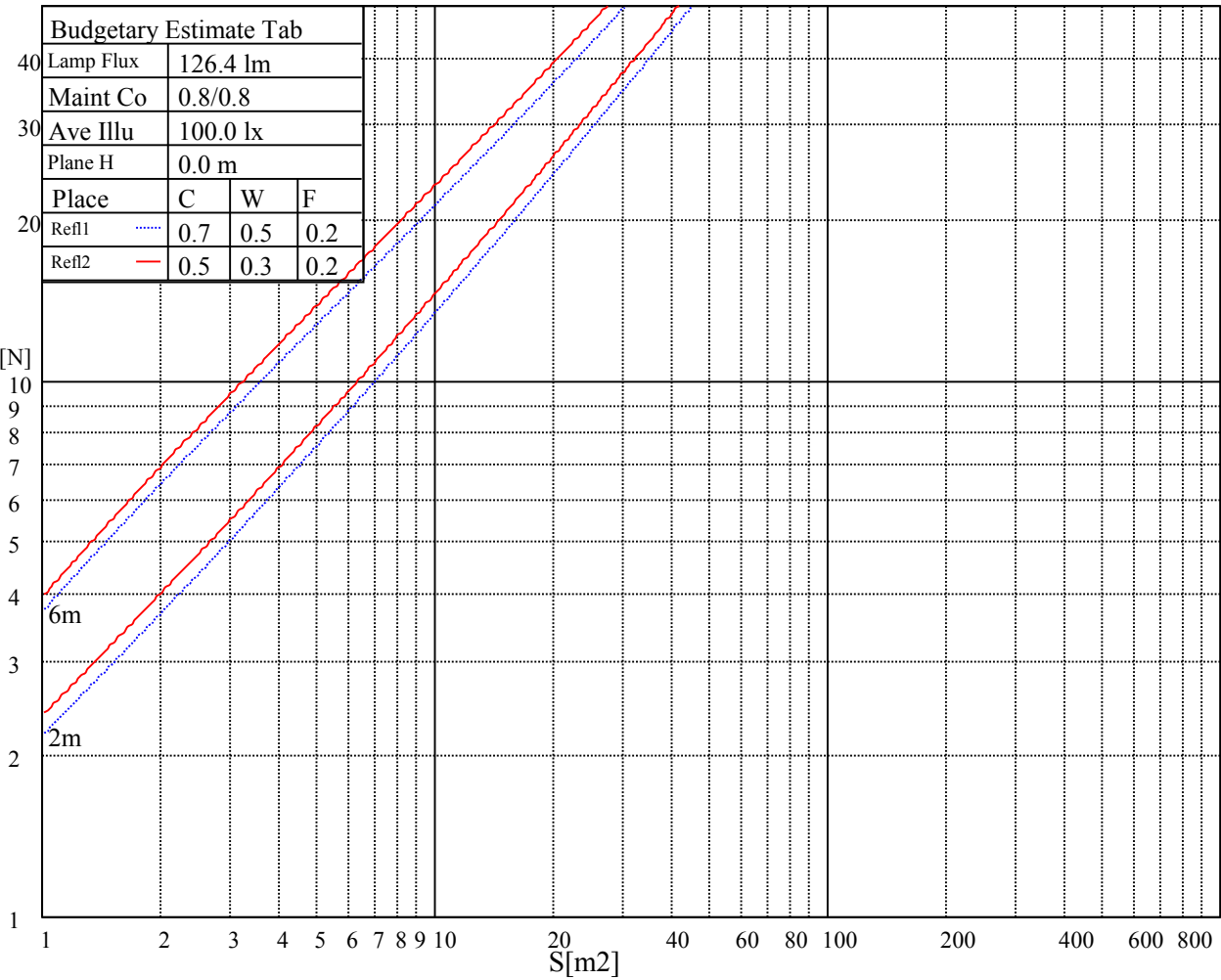
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

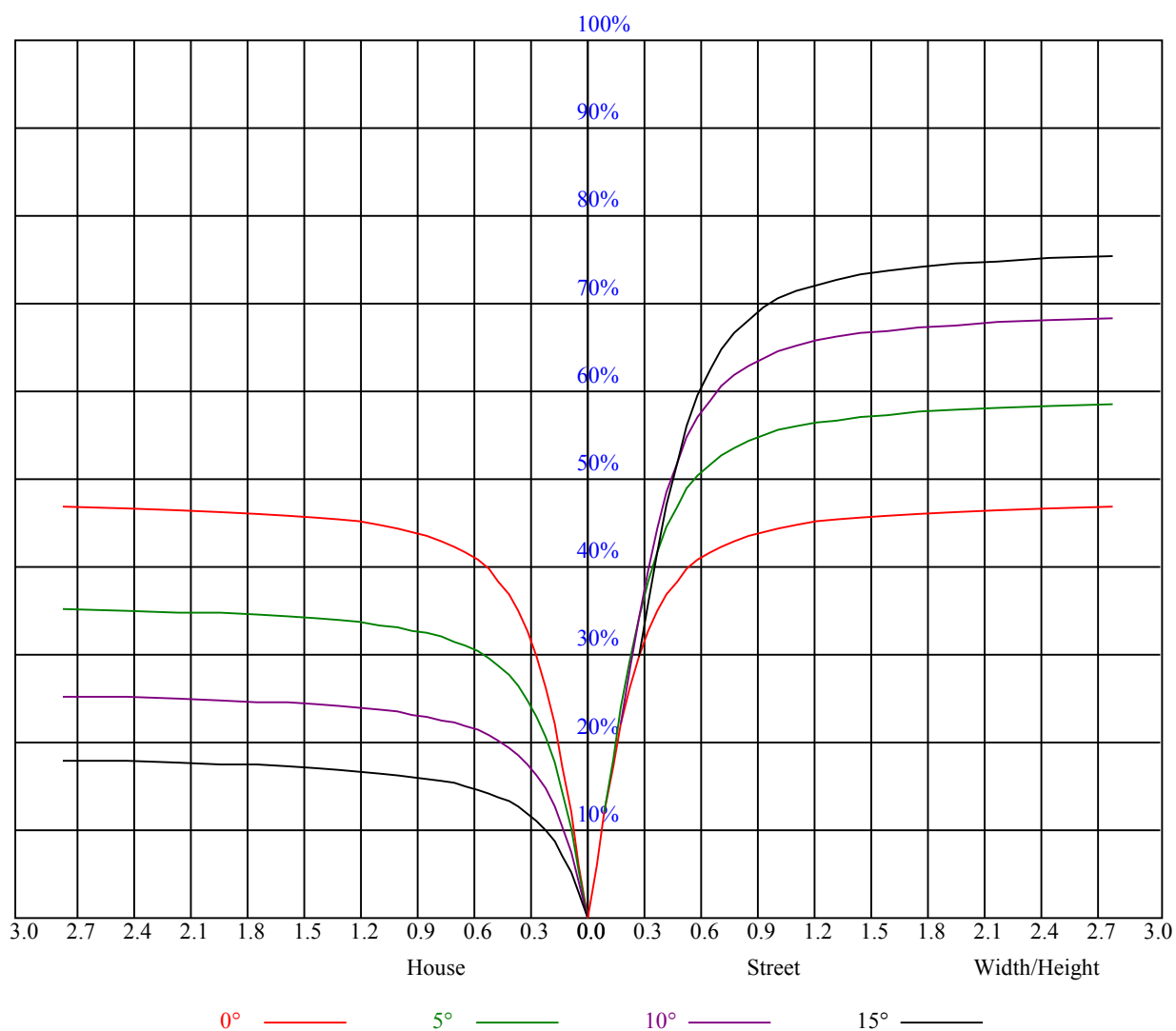
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.14	1.14	1.14	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	0.98	0.98	0.98	0.96
1	1.05	1.03	1.00	1.03	1.01	0.99	0.99	0.97	0.96	0.96	0.94	0.93	0.92	0.91	0.90	0.88
2	0.98	0.94	0.90	0.96	0.92	0.89	0.93	0.90	0.87	0.90	0.88	0.85	0.87	0.85	0.84	0.82
3	0.92	0.87	0.83	0.90	0.86	0.82	0.88	0.84	0.81	0.85	0.82	0.80	0.83	0.81	0.78	0.77
4	0.86	0.81	0.77	0.85	0.80	0.76	0.83	0.79	0.75	0.81	0.77	0.75	0.79	0.76	0.74	0.72
5	0.81	0.76	0.72	0.80	0.75	0.72	0.79	0.74	0.71	0.77	0.73	0.70	0.76	0.72	0.70	0.68
6	0.77	0.72	0.68	0.76	0.71	0.68	0.75	0.71	0.67	0.74	0.70	0.67	0.72	0.69	0.66	0.65
7	0.74	0.68	0.64	0.73	0.68	0.64	0.72	0.67	0.64	0.71	0.66	0.63	0.70	0.66	0.63	0.62
8	0.70	0.65	0.61	0.70	0.65	0.61	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.60	0.59
9	0.67	0.62	0.58	0.67	0.62	0.58	0.66	0.61	0.58	0.65	0.61	0.58	0.64	0.61	0.58	0.57
10	0.64	0.59	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.63	0.59	0.56	0.62	0.58	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	335.93	340.14	340.20	338.29	332.66	325.18	314.33	301.61	288.39
45.0	331.20	335.19	334.86	332.27	326.81	319.56	308.98	294.86	280.58
90.0	333.00	331.31	327.43	320.91	311.40	300.77	288.17	270.90	256.05
135.0	335.98	332.49	324.90	316.52	306.79	293.96	279.11	264.09	246.66
180.0	335.93	330.24	322.31	309.94	297.45	283.61	265.33	249.24	232.31
225.0	331.20	326.87	319.56	306.45	296.27	283.16	263.14	250.09	234.79
270.0	333.00	332.10	328.50	321.02	313.20	301.89	288.73	275.34	260.66
315.0	335.98	336.88	334.74	330.02	323.72	314.33	302.12	289.97	274.73
360.0	335.93	340.14	340.20	338.29	332.66	325.18	314.33	301.61	288.39
C/ γ (°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	272.25	254.93	239.40	223.71	203.57	187.65	172.52	156.26	141.19
45.0	263.87	246.77	230.63	214.26	194.29	178.65	163.86	148.05	133.37
90.0	240.47	219.94	204.02	188.33	171.11	154.58	140.85	126.68	114.98
135.0	228.83	212.18	193.67	178.03	161.21	145.13	131.51	119.08	105.30
180.0	213.64	195.24	179.10	162.28	146.14	132.81	118.58	107.38	95.46
225.0	216.96	198.73	183.21	166.61	150.58	137.53	123.81	112.22	99.96
270.0	241.76	226.80	211.39	194.29	176.85	162.45	147.66	133.31	121.22
315.0	259.93	242.33	224.49	208.69	190.97	174.09	160.09	146.42	131.01
360.0	272.25	254.93	239.40	223.71	203.57	187.65	172.52	156.26	141.19
C/ γ (°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	129.04	116.61	105.02	95.79	86.12	78.53	70.93	64.07	58.22
45.0	121.05	108.00	97.14	87.81	78.47	70.93	63.34	56.87	51.86
90.0	102.32	90.39	81.51	73.24	65.36	58.84	53.49	47.59	43.09
135.0	94.28	84.88	75.21	67.73	60.92	54.06	48.15	43.20	38.76
180.0	84.60	76.05	68.34	59.91	53.94	48.83	43.03	38.98	35.04
225.0	89.21	81.06	73.52	64.74	58.44	52.99	46.91	42.53	38.64
270.0	108.79	99.17	89.27	80.16	72.90	65.76	59.29	53.89	49.16
315.0	119.81	109.01	97.93	87.69	80.10	72.56	65.53	59.85	53.83
360.0	129.04	116.61	105.02	95.79	86.12	78.53	70.93	64.07	58.22
C/ γ (°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	53.10	47.25	43.31	39.49	35.55	32.34	29.36	26.83	24.02
45.0	47.25	41.91	37.97	34.20	30.43	27.73	25.20	22.67	20.48
90.0	38.93	34.31	30.99	28.07	24.92	22.67	20.53	18.34	16.99
135.0	35.27	31.56	28.24	25.43	22.89	20.64	18.84	17.16	15.53
180.0	31.33	28.13	25.59	22.95	21.04	19.24	17.55	16.14	14.74
225.0	34.48	30.99	28.35	25.54	23.34	21.09	19.24	17.66	15.98
270.0	43.76	40.05	36.73	33.41	30.21	27.56	24.98	22.61	20.64
315.0	49.11	44.61	40.73	37.46	34.31	30.60	28.07	25.71	23.18
360.0	53.10	47.25	43.31	39.49	35.55	32.34	29.36	26.83	24.02
C/ γ (°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	21.99	20.03	18.11	16.31	14.91	13.61	12.43	11.53	10.69
45.0	18.84	17.16	15.75	14.34	13.16	12.04	11.19	10.41	9.73
90.0	15.58	14.23	13.44	12.38	11.14	10.52	9.90	9.11	8.66
135.0	14.40	13.44	12.60	11.59	10.80	10.13	9.45	8.89	8.33
180.0	13.56	12.66	11.93	11.08	10.46	9.84	9.28	8.66	8.21
225.0	14.63	13.56	12.71	11.70	10.97	10.24	9.68	9.00	8.49
270.0	18.79	17.27	15.69	14.46	13.39	12.38	11.31	10.46	9.79
315.0	21.15	19.18	17.16	15.86	14.68	13.44	12.60	11.59	10.52
360.0	21.99	20.03	18.11	16.31	14.91	13.61	12.43	11.53	10.69

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	10.01	9.28	8.55	8.10	7.59	7.09	6.69	6.30	5.85
45.0	9.23	8.49	8.04	7.65	7.14	6.75	6.41	6.02	5.68
90.0	8.10	7.59	7.14	6.75	6.41	6.02	5.74	5.40	5.06
135.0	7.82	7.31	6.98	6.64	6.36	5.91	5.57	5.29	5.01
180.0	7.71	7.31	6.92	6.53	6.24	5.91	5.57	5.29	5.01
225.0	7.99	7.43	7.03	6.64	6.24	5.91	5.51	5.29	5.01
270.0	8.94	8.44	7.93	7.43	6.92	6.47	6.02	5.68	5.34
315.0	9.96	9.17	8.44	7.99	7.48	6.92	6.53	6.19	5.74
360.0	10.01	9.28	8.55	8.10	7.59	7.09	6.69	6.30	5.85
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	5.57	5.29	4.95	4.67	4.50	4.22	4.05	3.88	3.66
45.0	5.40	5.12	4.84	4.56	4.39	4.16	3.94	3.71	3.60
90.0	4.84	4.56	4.33	4.16	3.88	3.77	3.60	3.43	3.32
135.0	4.84	4.56	4.39	4.11	3.94	3.77	3.60	3.49	3.32
180.0	4.73	4.50	4.33	4.11	3.94	3.77	3.60	3.43	3.32
225.0	4.73	4.44	4.22	4.05	3.88	3.66	3.54	3.38	3.26
270.0	5.06	4.78	4.56	4.33	4.11	3.94	3.71	3.54	3.43
315.0	5.40	5.12	4.84	4.61	4.39	4.11	3.94	3.77	3.60
360.0	5.57	5.29	4.95	4.67	4.50	4.22	4.05	3.88	3.66
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.49	3.38	3.21	3.09	2.98	2.87	2.76	2.70	2.59
45.0	3.43	3.32	3.21	3.09	2.98	2.87	2.81	2.76	2.64
90.0	3.15	3.04	2.98	2.87	2.76	2.64	2.59	2.53	2.48
135.0	3.21	3.09	2.98	2.87	2.81	2.76	2.64	2.64	2.53
180.0	3.15	3.04	2.93	2.87	2.76	2.70	2.59	2.53	2.53
225.0	3.15	2.98	2.93	2.81	2.70	2.64	2.59	2.53	2.48
270.0	3.26	3.09	3.04	2.87	2.81	2.70	2.64	2.59	2.48
315.0	3.43	3.32	3.21	3.09	2.98	2.87	2.76	2.70	2.64
360.0	3.49	3.38	3.21	3.09	2.98	2.87	2.76	2.70	2.59
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	2.53	2.53	2.42	2.36	2.36	2.36	2.31	2.31	2.31
45.0	2.59	2.53	2.48	2.48	2.48	2.48	2.48	2.42	2.42
90.0	2.42	2.42	2.36	2.31	2.25	2.25	2.19	2.19	2.14
135.0	2.53	2.48	2.48	2.42	2.42	2.42	2.42	2.42	2.42
180.0	2.48	2.48	2.42	2.36	2.36	2.36	2.36	2.36	2.31
225.0	2.48	2.42	2.36	2.36	2.42	2.42	2.42	2.42	2.42
270.0	2.48	2.42	2.36	2.36	2.31	2.31	2.25	2.19	2.19
315.0	2.59	2.59	2.48	2.48	2.48	2.42	2.42	2.42	2.42
360.0	2.53	2.53	2.42	2.36	2.36	2.36	2.31	2.31	2.31
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	2.31	2.25	2.19	2.14	2.03	1.91	1.74	0.96	0.62
45.0	2.42	2.42	2.42	2.36	2.31	2.08	1.91	1.01	0.62
90.0	2.08	2.08	2.03	2.03	1.91	1.80	1.01	0.68	0.51
135.0	2.36	2.36	2.31	2.19	1.97	1.74	0.90	0.62	0.51
180.0	2.25	2.19	2.08	1.97	1.74	0.84	0.62	0.51	0.45
225.0	2.36	2.36	2.31	2.08	1.80	0.84	0.62	0.51	0.39
270.0	2.14	2.14	2.08	2.03	1.80	1.35	0.79	0.56	0.45
315.0	2.42	2.42	2.42	2.36	2.19	1.91	1.01	0.68	0.51
360.0	2.31	2.25	2.19	2.14	2.03	1.91	1.74	0.96	0.62

Intensity data(cd)

Appendix Page: 18 Total:18

C/γ(°)	90.0
0.0	0.56
45.0	0.51
90.0	0.45
135.0	0.45
180.0	0.39
225.0	0.39
270.0	0.45
315.0	0.39
360.0	0.56