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Nata

LumCAT: 1656-S	
Luminaire: 92.70.122.00	
Report No: NATA0100	Voltage(V): 37.6000
Test No: GC2018080213	Current(A): 0.2000
LampCAT: BRIDGELUX V4 HD	Power (W): 7.5200
Lamp flux(lm): 719.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 47	Width(mm): 47
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 657.30
Efficiency(%): 91.42%
Lumens(lm)/Power(W): 88.58
Central intensity(cd): 9343.483
Maximum intensity(cd): 9343.483
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=10.2
[C90/270]Total=10.2
Field angle(10%Imax): [C0/180]Total=21.1
[C90/270]Total=21.1
Maximum s/h(1/2): C0_180=0.18 C90_270=0.18
Maximum s/h(1/4): C0_180=0.19 C90_270=0.19
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 92.65%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.103%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9343.484	8.941	8.941	1.244%	1.360%
2.0	8069.135	61.761	70.702	8.590%	10.756%
4.0	5914.434	90.482	161.184	12.584%	24.522%
6.0	3653.130	83.746	244.93	11.648%	37.263%
8.0	1999.442	61.028	305.958	8.488%	46.548%
10.0	1063.380	40.497	346.455	5.632%	52.709%
12.0	600.872	27.398	373.854	3.811%	56.877%
14.0	398.133	21.124	394.977	2.938%	60.091%
16.0	321.722	19.448	414.426	2.705%	63.050%
18.0	288.929	19.581	434.007	2.723%	66.029%
20.0	272.460	20.437	454.444	2.842%	69.138%
22.0	263.596	21.656	476.1	3.012%	72.433%
24.0	255.992	22.835	498.935	3.176%	75.907%
26.0	249.963	24.032	522.967	3.342%	79.563%
28.0	242.661	24.985	547.952	3.475%	83.364%
30.0	231.925	25.432	573.384	3.537%	87.234%
32.0	222.208	25.825	599.208	3.592%	91.162%
34.0	175.231	21.490	620.699	2.989%	94.432%
36.0	77.168	9.948	630.646	1.384%	95.945%
38.0	17.253	2.330	632.976	.324%	96.300%
40.0	12.629	1.780	634.756	.248%	96.571%
42.0	10.137	1.488	636.244	.207%	96.797%
44.0	8.472	1.291	637.534	.180%	96.993%
46.0	7.983	1.259	638.794	.175%	97.185%
48.0	7.749	1.263	640.057	.176%	97.377%
50.0	7.405	1.244	641.301	.173%	97.566%
52.0	6.937	1.199	642.5	.167%	97.749%
54.0	6.428	1.140	643.64	.159%	97.922%
56.0	6.111	1.111	644.751	.155%	98.091%
58.0	5.753	1.070	645.821	.149%	98.254%
60.0	5.382	1.022	646.844	.142%	98.410%
62.0	4.914	0.952	647.795	.132%	98.554%
64.0	4.377	0.863	648.658	.120%	98.686%
66.0	3.895	0.780	649.438	.109%	98.804%
68.0	3.627	0.737	650.176	.103%	98.916%
70.0	3.469	0.715	650.891	.099%	99.025%
72.0	3.372	0.703	651.594	.098%	99.132%
74.0	3.331	0.702	652.296	.098%	99.239%

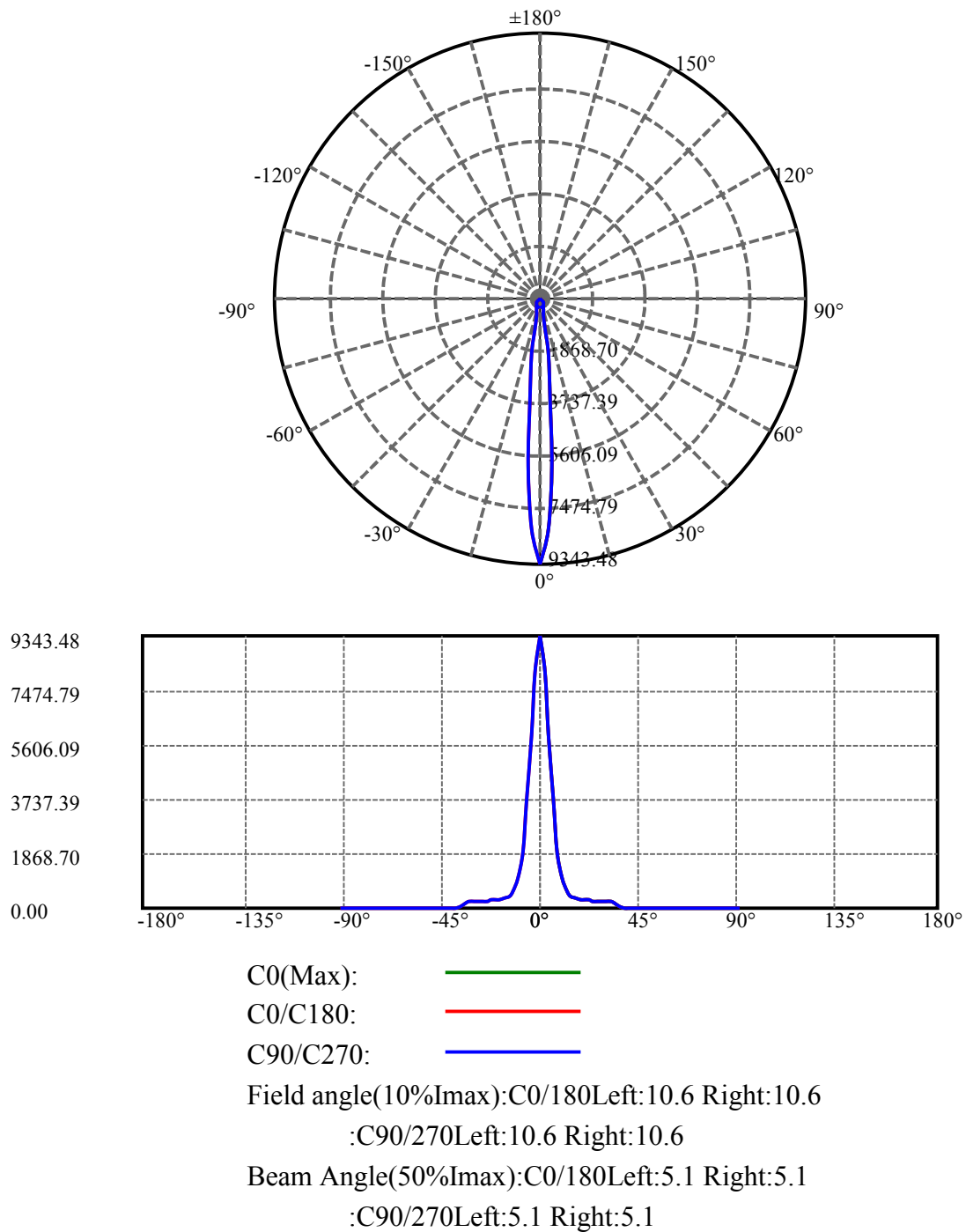
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.269	0.696	652.992	.097%	99.345%
78.0	3.207	0.688	653.68	.096%	99.450%
80.0	3.138	0.678	654.358	.094%	99.553%
82.0	3.083	0.670	655.027	.093%	99.655%
84.0	3.021	0.659	655.686	.092%	99.755%
86.0	2.980	0.652	656.338	.091%	99.854%
88.0	2.932	0.643	656.981	.089%	99.952%
90.0	2.890	0.317	657.298	.044%	100.000%

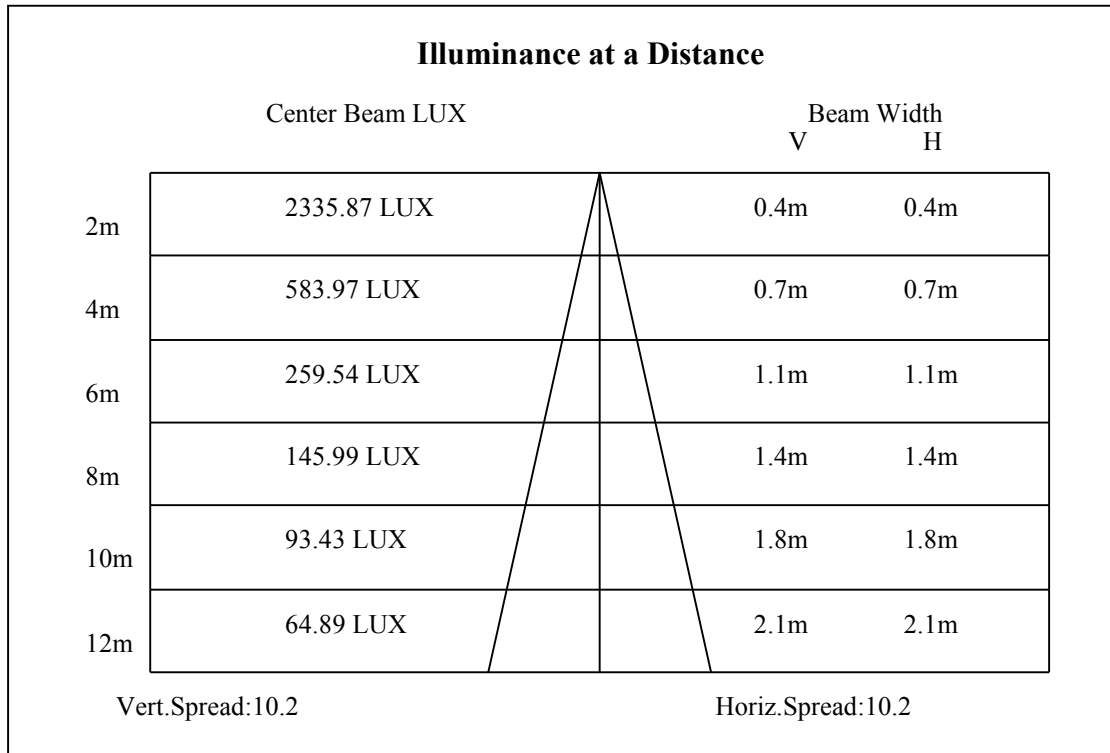
ZONAL LUMEN SUMMARY

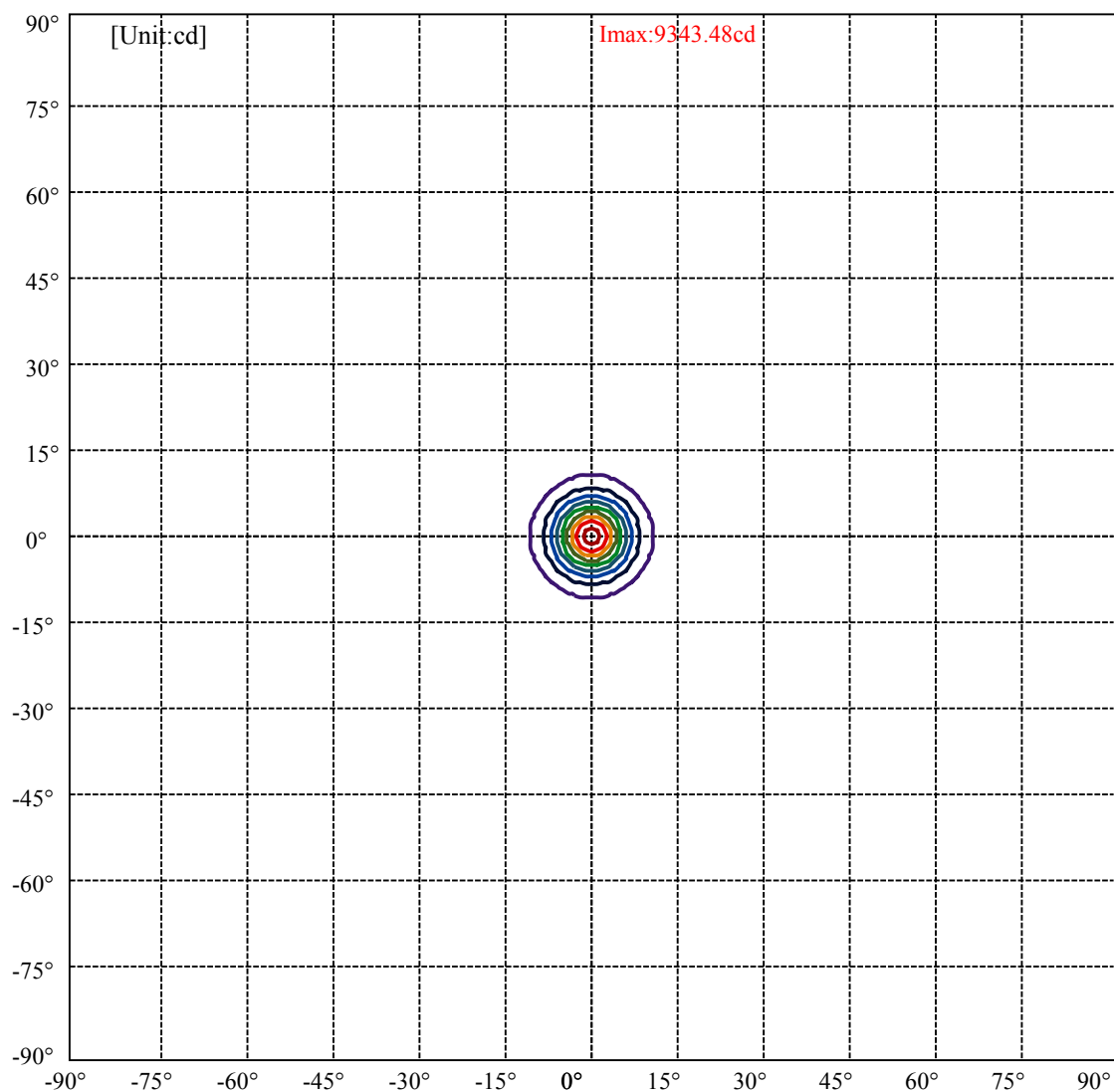
Zone	Lumens	%Lamp	%Fixt
0-30	573.38	79.75%	87.23%
0-40	634.76	88.28%	96.57%
0-60	646.84	89.96%	98.41%
0-90	656.98	91.37%	99.95%
0-120	656.98	91.37%	99.95%
0-180	657.30	91.42%	100.00%
60-90	11.16	1.55%	1.70%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-26.23	525.84	73.13%	80.00%

ZONAL LUMEN SUMMARY

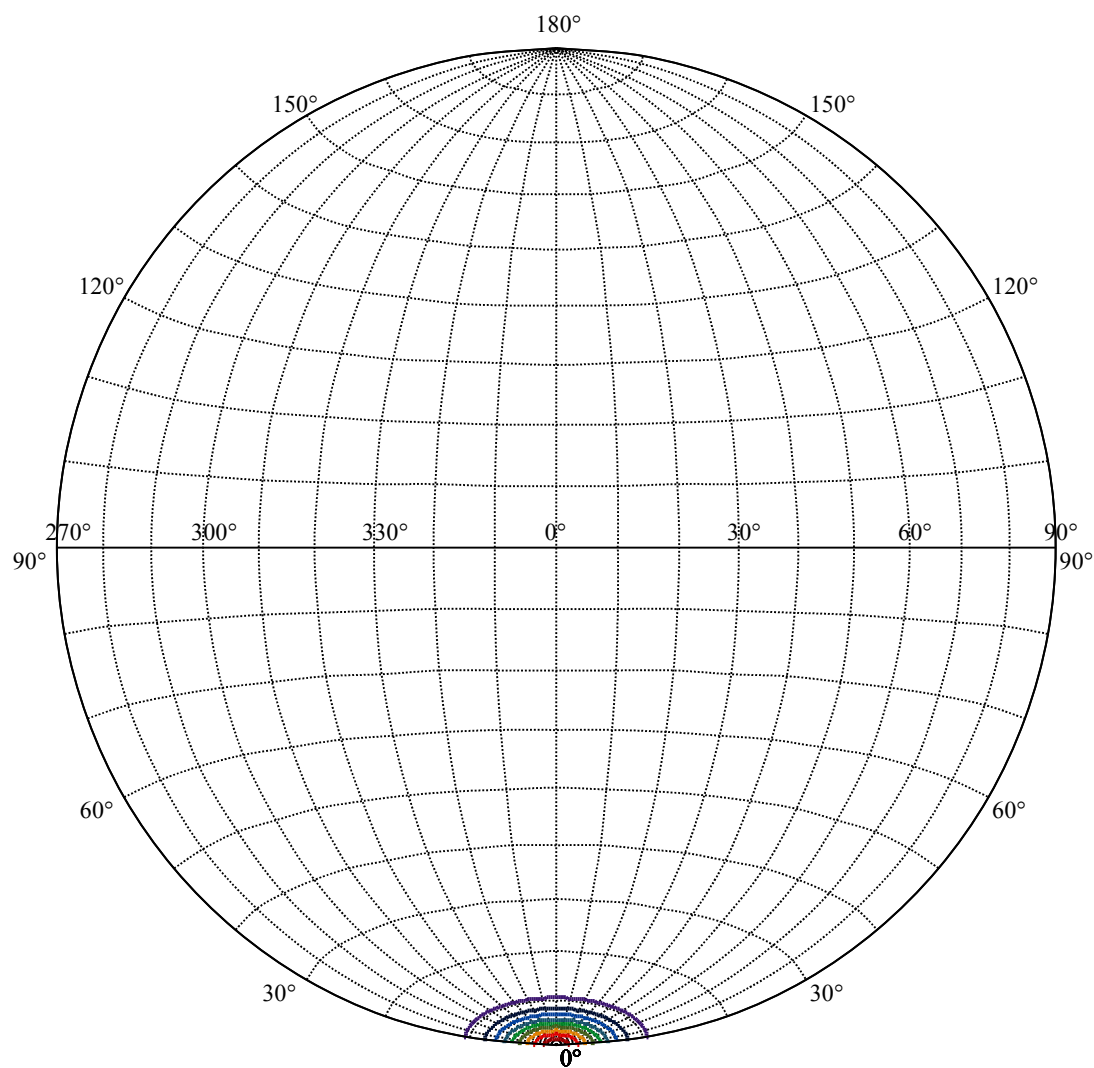
0-10	346.46
10-20	107.99
20-30	118.94
30-40	61.37
40-50	6.54
50-60	5.54
60-70	4.05
70-80	3.47
80-90	2.62
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00







(10%Imax) 934.348	—
(20%Imax) 1868.7	—
(30%Imax) 2803.04	—
(40%Imax) 3737.39	—
(50%Imax) 4671.74	—
(60%Imax) 5606.09	—
(70%Imax) 6540.44	—
(80%Imax) 7474.79	—
(90%Imax) 8409.13	—



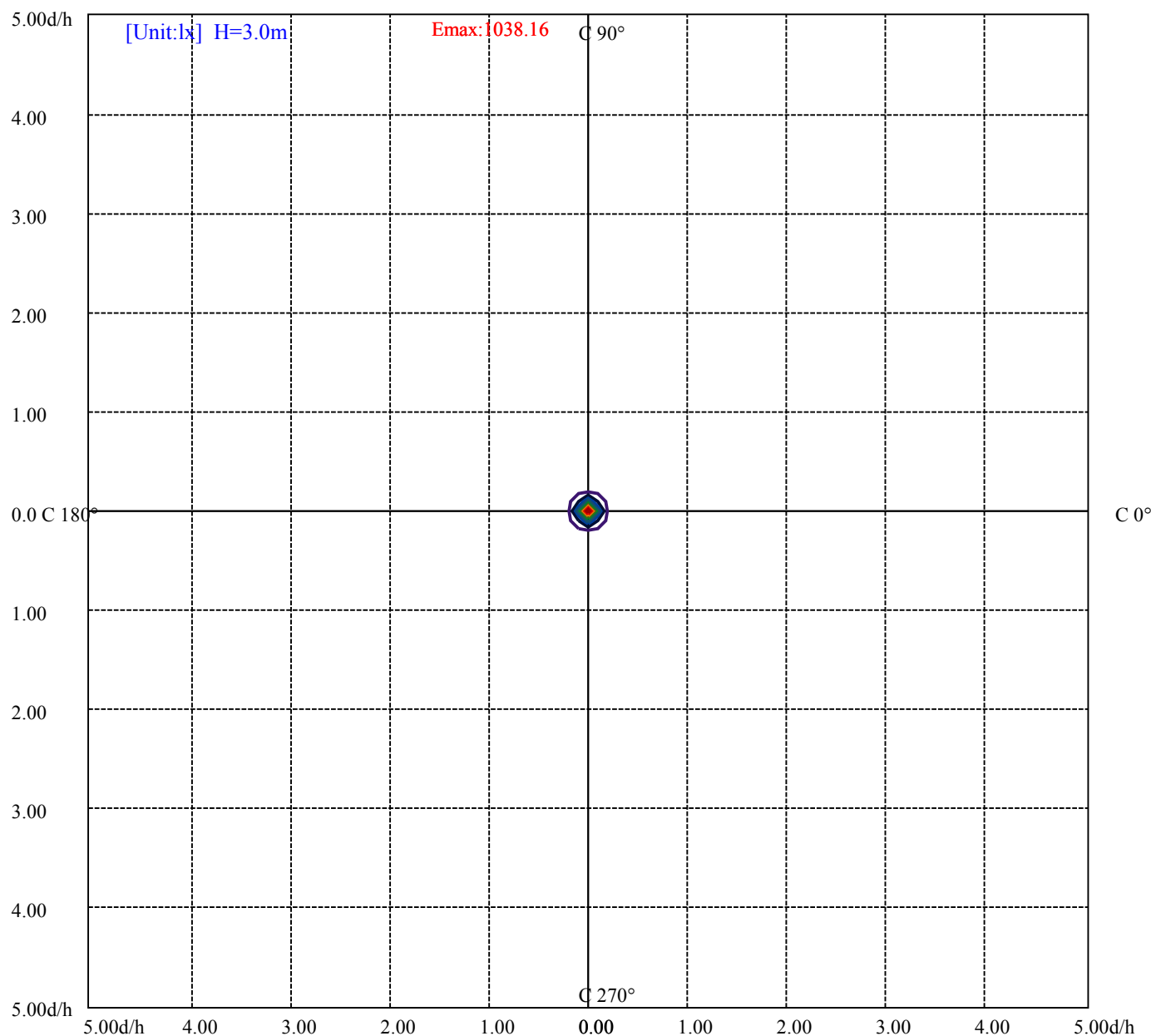
House

[Unit:cd]

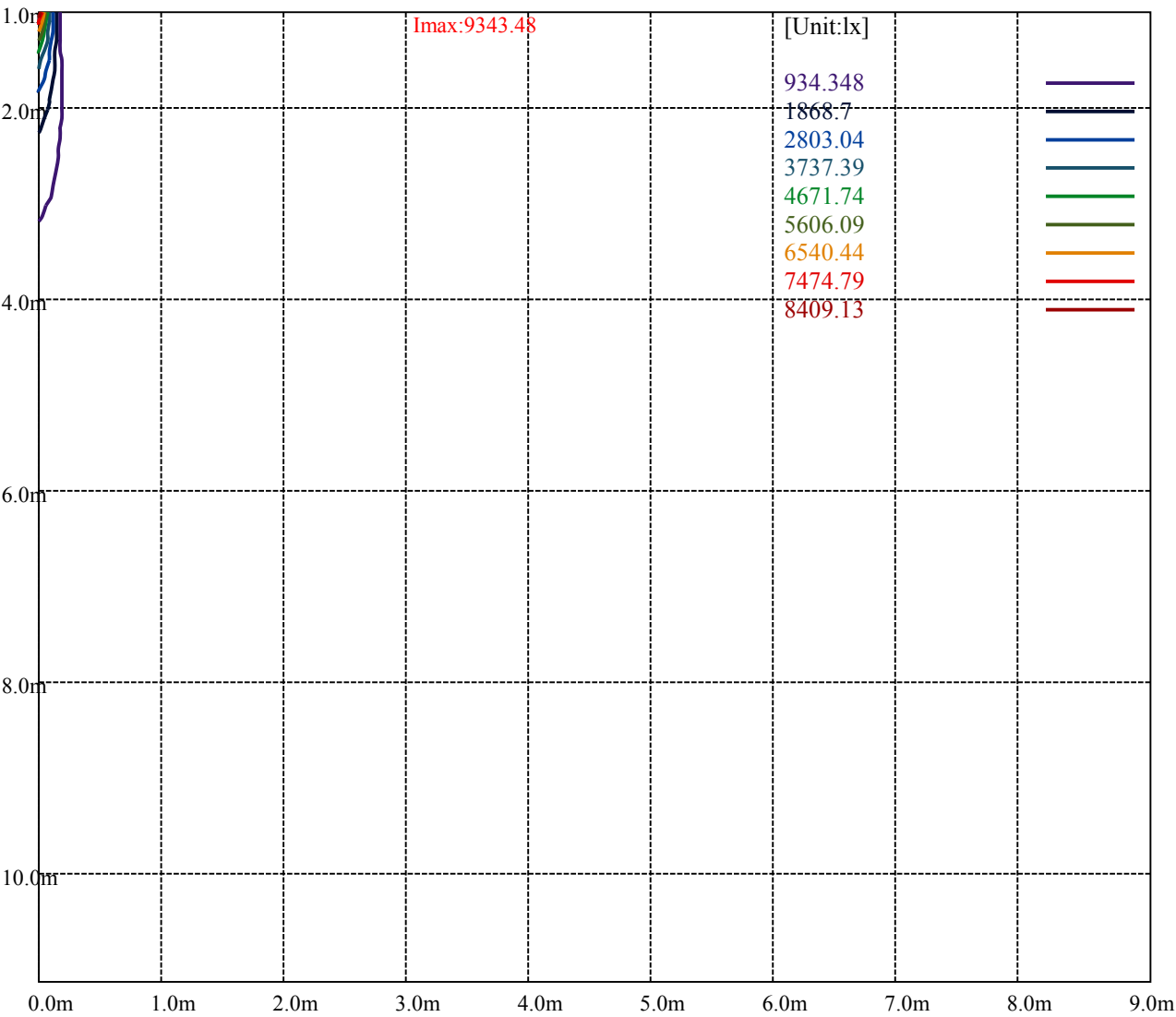
Road

Imax:9343.48

(10%Imax)	934.348	—
(20%Imax)	1868.7	—
(30%Imax)	2803.04	—
(40%Imax)	3737.39	—
(50%Imax)	4671.74	—
(60%Imax)	5606.09	—
(70%Imax)	6540.44	—
(80%Imax)	7474.79	—
(90%Imax)	8409.13	—



(10%Emax)	103.8154	—
(20%Emax)	207.6311	—
(30%Emax)	311.4467	—
(40%Emax)	415.2611	—
(50%Emax)	519.0767	—
(60%Emax)	622.8922	—
(70%Emax)	726.7078	—
(80%Emax)	830.5233	—
(90%Emax)	934.3389	—



Luminance Table

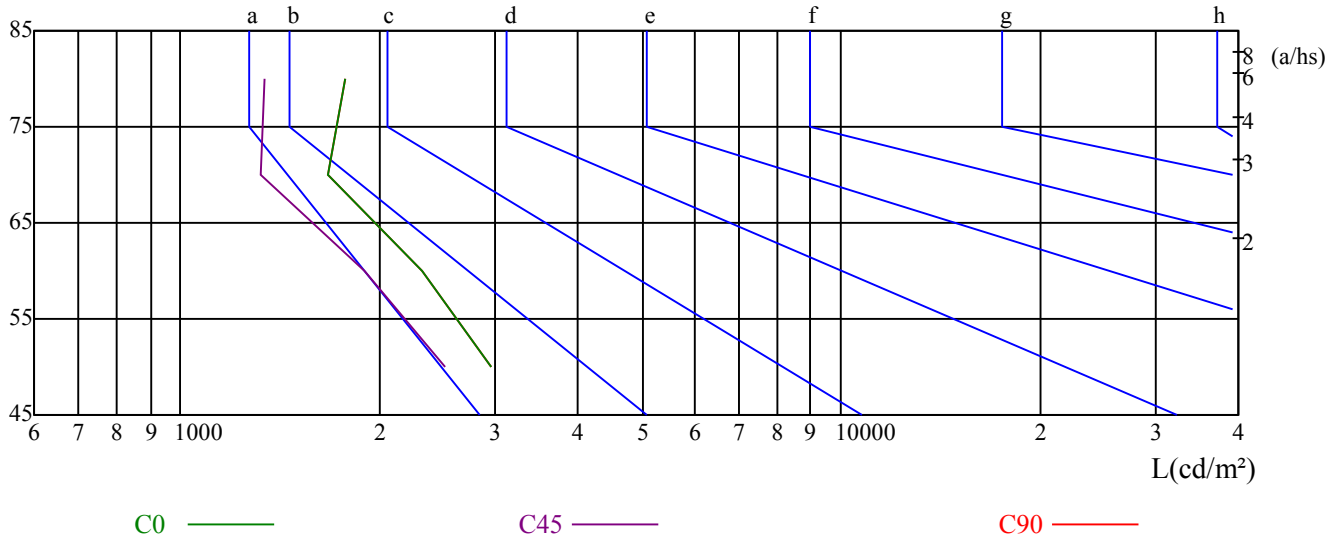
γ	45	50	55	60	65	70	75	80	85
C0	0	2962	0	2314	0	1667	0	1771	0
C45	0	2512	0	1901	0	1319	0	1337	0
C90	0	2962	0	2314	0	1667	0	1771	0

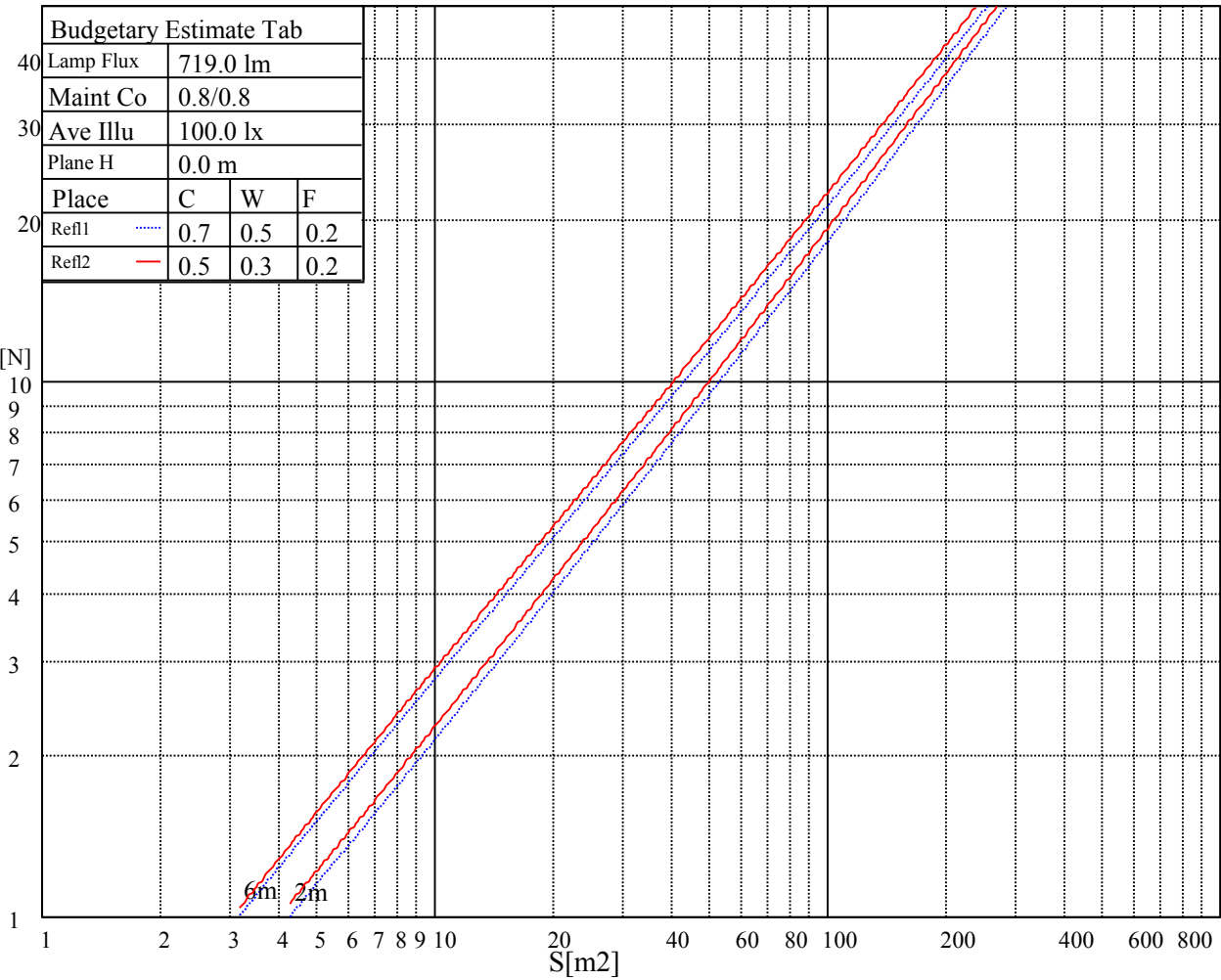
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
99519	100139	99947	86427	88883	88449	70205	64772	65129

Glare Table

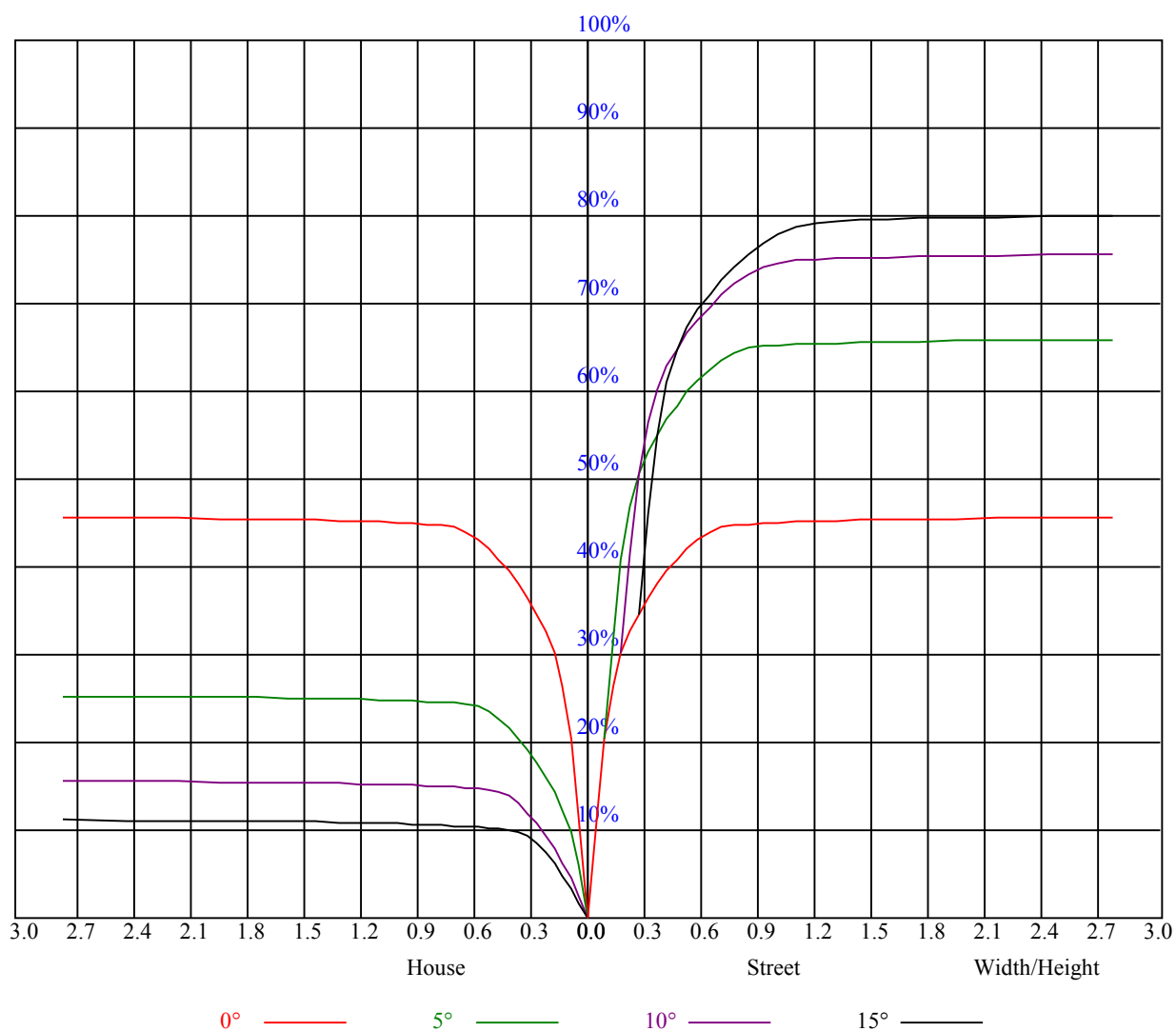
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve

 $\gamma(^{\circ})$ 



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	1.10	1.10	1.10	1.08	1.08	1.08	1.03	1.03	1.03	0.99	0.99	0.99	0.95	0.95	0.95	0.93
1	1.03	1.00	0.98	1.01	0.99	0.97	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87
2	0.98	0.94	0.92	0.96	0.93	0.91	0.93	0.91	0.89	0.90	0.88	0.87	0.88	0.86	0.85	0.84
3	0.93	0.90	0.87	0.92	0.89	0.86	0.90	0.87	0.85	0.88	0.85	0.83	0.86	0.84	0.82	0.81
4	0.90	0.86	0.83	0.89	0.85	0.82	0.87	0.84	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.78
5	0.86	0.82	0.79	0.86	0.82	0.79	0.84	0.81	0.78	0.83	0.80	0.78	0.81	0.79	0.77	0.76
6	0.84	0.79	0.76	0.83	0.79	0.76	0.82	0.78	0.76	0.80	0.78	0.75	0.79	0.77	0.75	0.74
7	0.81	0.77	0.74	0.80	0.77	0.74	0.79	0.76	0.74	0.78	0.75	0.73	0.78	0.75	0.73	0.72
8	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.70
9	0.77	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.69
10	0.75	0.71	0.68	0.74	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.68	0.73	0.70	0.68	0.67



Nata 1656-S

Intensity data(cd)									
Appendix Page: 15 Total:16									
C/γ(°)	0.0	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0
0.0	9272.60	8679.64	6653.02	4305.41	2502.31	1326.86	736.10	458.62	357.87
45.0	9324.90	8539.25	6539.60	4133.63	2353.11	1242.07	667.28	414.57	310.52
90.0	9375.55	7930.87	5703.84	3471.86	1795.39	936.51	528.98	352.91	303.58
135.0	9400.88	8134.58	6065.01	3739.98	2075.08	1100.58	602.32	390.35	316.02
180.0	9272.60	7593.38	5218.80	3136.56	1708.40	887.12	535.97	384.13	321.31
225.0	9324.90	7588.42	5340.47	3204.28	1703.45	920.32	539.61	377.41	314.15
270.0	9375.55	8229.83	6063.36	3687.13	2029.38	1093.42	619.94	412.92	324.28
315.0	9400.88	7857.10	5731.37	3546.18	1828.42	1000.15	576.77	394.15	326.04
360.0	9272.60	8679.64	6653.02	4305.41	2502.31	1326.86	736.10	458.62	357.87
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	319.33	296.75	282.44	268.51	258.49	248.69	237.51	225.84	194.73
45.0	280.79	267.96	261.24	259.87	259.37	252.16	241.53	230.91	190.99
90.0	274.57	257.22	245.88	238.56	231.18	226.28	215.38	206.08	153.11
135.0	278.59	263.22	257.99	254.64	252.10	242.96	231.95	222.48	173.04
180.0	296.04	286.07	273.63	261.74	253.26	244.29	232.50	223.31	158.12
225.0	282.49	262.45	254.42	248.69	244.29	243.13	238.12	228.81	172.82
270.0	282.99	260.25	253.26	247.26	241.59	233.11	219.56	211.53	180.03
315.0	296.64	285.74	279.91	268.68	259.43	250.67	238.83	228.70	178.99
360.0	319.33	296.75	282.44	268.51	258.49	248.69	237.51	225.84	194.73
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	105.60	21.31	12.11	10.19	8.37	7.43	6.83	5.78	4.96
45.0	91.50	18.33	12.06	9.97	8.42	7.87	7.65	7.32	6.50
90.0	57.09	15.86	12.94	10.79	9.69	9.91	10.19	10.08	9.47
135.0	79.28	15.36	12.72	10.02	8.20	7.54	6.88	6.44	6.33
180.0	57.64	13.27	10.52	7.87	6.11	5.40	4.73	4.35	4.13
225.0	64.36	15.42	13.16	10.68	8.92	8.31	7.82	7.71	7.98
270.0	85.83	22.19	15.36	11.95	9.97	9.69	10.41	10.96	10.52
315.0	76.03	16.30	12.17	9.63	8.09	7.71	7.49	6.61	5.62
360.0	105.60	21.31	12.11	10.19	8.37	7.43	6.83	5.78	4.96
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	4.35	4.07	3.91	3.85	3.80	3.69	3.63	3.63	3.52
45.0	5.45	5.23	5.18	5.07	4.73	4.24	3.80	3.58	3.41
90.0	8.48	7.38	6.00	4.96	4.35	3.85	3.63	3.52	3.47
135.0	6.61	6.83	6.72	6.28	5.56	4.68	4.07	3.69	3.52
180.0	4.02	4.02	4.07	4.29	4.51	4.62	4.29	3.85	3.52
225.0	8.53	9.03	9.08	8.64	7.38	5.95	4.51	3.80	3.47
270.0	9.08	7.49	6.00	5.07	4.40	3.96	3.58	3.47	3.47
315.0	4.90	4.84	5.07	4.90	4.57	4.02	3.63	3.47	3.36
360.0	4.35	4.07	3.91	3.85	3.80	3.69	3.63	3.63	3.52
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	3.30	3.25	3.19	3.14	3.08	3.08	3.08	3.08	3.08
45.0	3.36	3.36	3.30	3.19	3.14	3.14	3.03	3.03	2.97
90.0	3.47	3.41	3.36	3.30	3.19	3.14	3.03	2.92	2.86
135.0	3.41	3.36	3.25	3.19	3.14	3.08	2.97	2.97	2.92
180.0	3.36	3.25	3.19	3.14	3.08	2.97	2.97	2.97	2.92
225.0	3.41	3.36	3.30	3.19	3.14	3.08	3.03	2.92	2.86
270.0	3.41	3.41	3.36	3.36	3.25	3.14	3.03	2.92	2.86
315.0	3.25	3.25	3.19	3.14	3.08	3.03	3.03	3.03	2.97
360.0	3.30	3.25	3.19	3.14	3.08	3.08	3.08	3.08	3.08

Intensity data(cd)

Appendix Page: 16 Total:16

C/γ(°)	90.0
0.0	3.08
45.0	2.92
90.0	2.81
135.0	2.86
180.0	2.86
225.0	2.86
270.0	2.81
315.0	2.92
360.0	3.08