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Nata

LumCAT: 3-2044-M	
Luminaire: 92.70.131.00	
Report No: NATA0100	Voltage(V): 34.7000
Test No: GC2018091101	Current(A): 0.5000
LampCAT: LUMINUS CXM-11-AC30	Power (W): 17.3500
Lamp flux(lm): 2527.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 84	Width(mm): 84
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2250.05
Efficiency(%): 89.04%
Lumens(lm)/Power(W): 132.65
Central intensity(cd): 8949.234
Maximum intensity(cd): 8949.234
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=24.3
[C90/270]Total=24.3
Field angle(10%Imax): [C0/180]Total=49.3
[C90/270]Total=49.3
Maximum s/h(1/2): C0_180=0.41 C90_270=0.41
Maximum s/h(1/4): C0_180=0.41 C90_270=0.41
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.07%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.478%

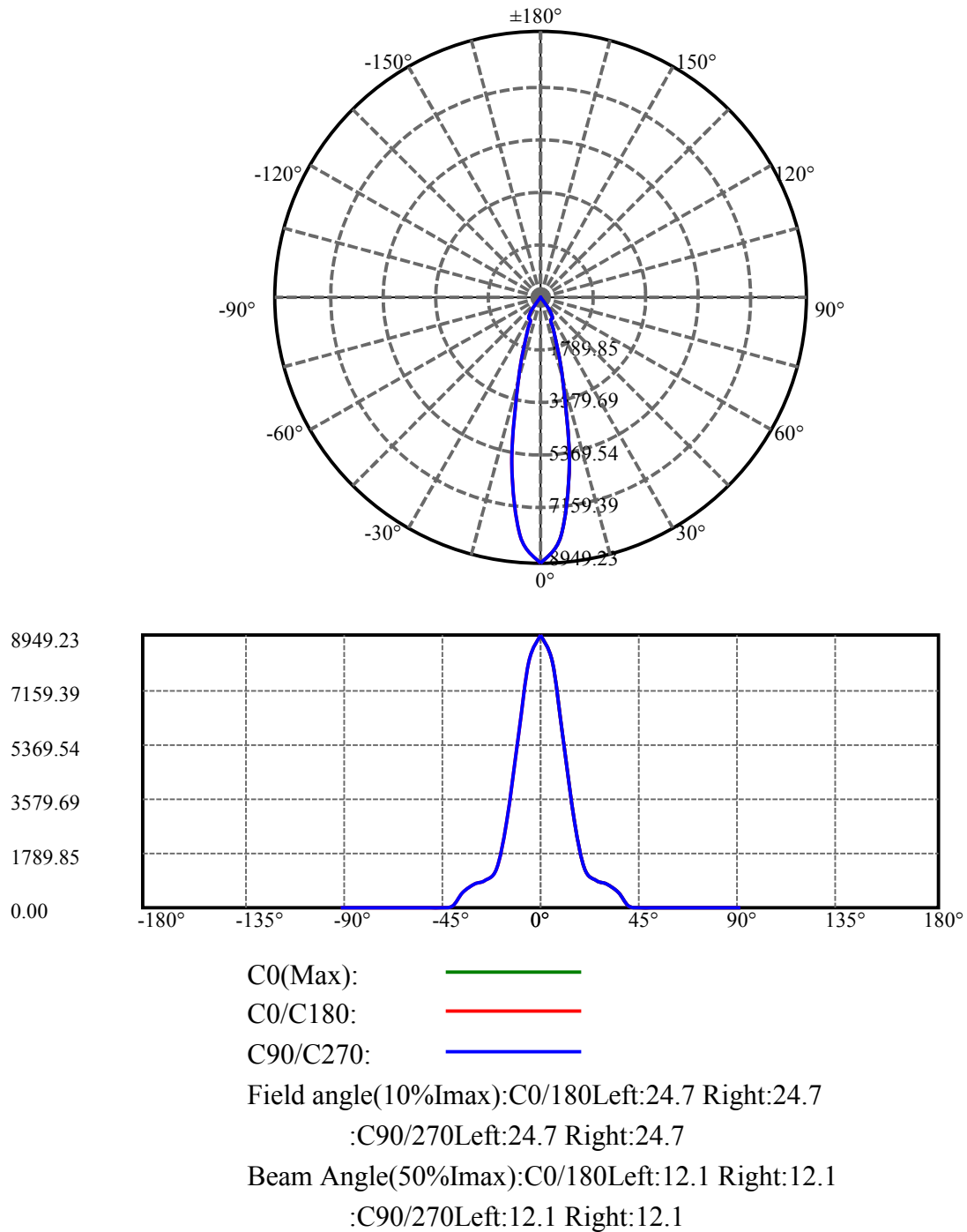
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	8949.234	53.518	53.518	2.118%	2.379%
5.0	8069.484	385.506	439.024	15.255%	19.512%
10.0	5688.563	541.455	980.479	21.427%	43.576%
15.0	2854.688	404.990	1385.469	16.027%	61.575%
20.0	1280.559	240.072	1625.541	9.500%	72.245%
25.0	867.945	201.062	1826.602	7.957%	81.181%
30.0	775.913	212.653	2039.256	8.415%	90.632%
35.0	477.373	150.085	2189.341	5.939%	97.302%
40.0	30.600	10.781	2200.123	.427%	97.781%
45.0	13.057	5.061	2205.183	.200%	98.006%
50.0	11.855	4.978	2210.161	.197%	98.227%
55.0	11.250	5.051	2215.212	.200%	98.452%
60.0	10.863	5.157	2220.369	.204%	98.681%
65.0	10.575	5.253	2225.623	.208%	98.914%
70.0	10.378	5.346	2230.968	.212%	99.152%
75.0	10.216	5.409	2236.378	.214%	99.392%
80.0	10.104	5.454	2241.832	.216%	99.635%
85.0	10.048	5.487	2247.318	.217%	99.879%
90.0	9.963	2.731	2250.049	.108%	100.000%

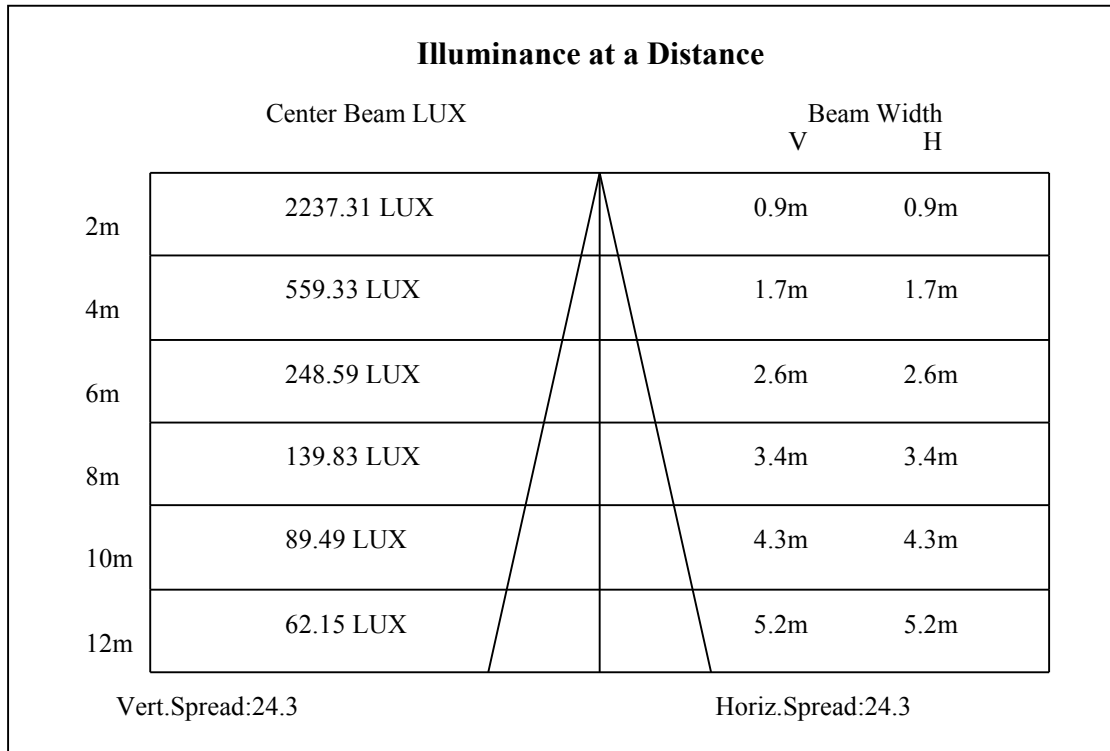
ZONAL LUMEN SUMMARY

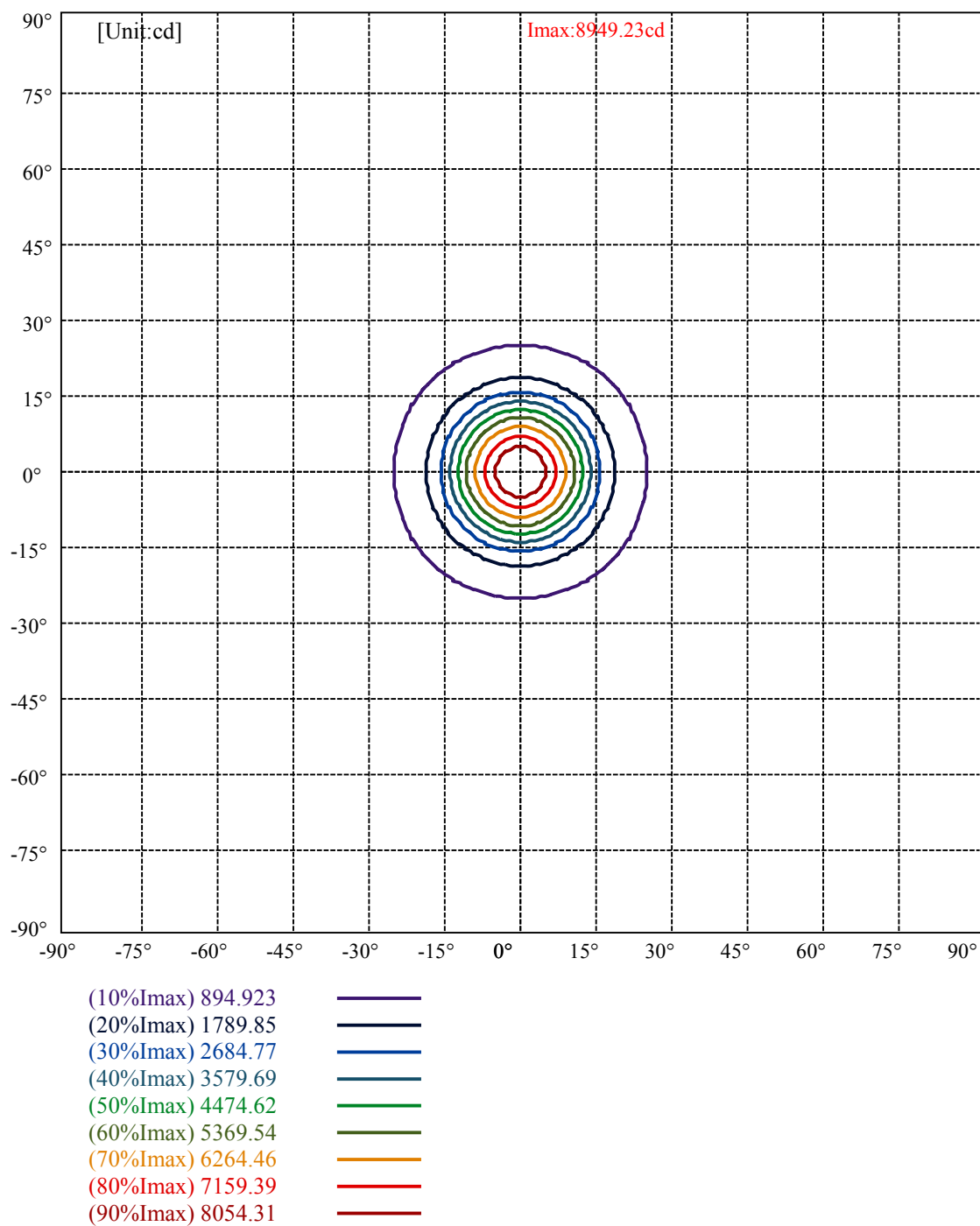
Zone	Lumens	%Lamp	%Fixt
0-30	2039.26	80.70%	90.63%
0-40	2200.12	87.06%	97.78%
0-60	2220.37	87.87%	98.68%
0-90	2247.32	88.93%	99.88%
0-120	2247.32	88.93%	99.88%
0-180	2250.05	89.04%	100.00%
60-90	32.11	1.27%	1.43%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-24.34	1800.04	71.23%	80.00%

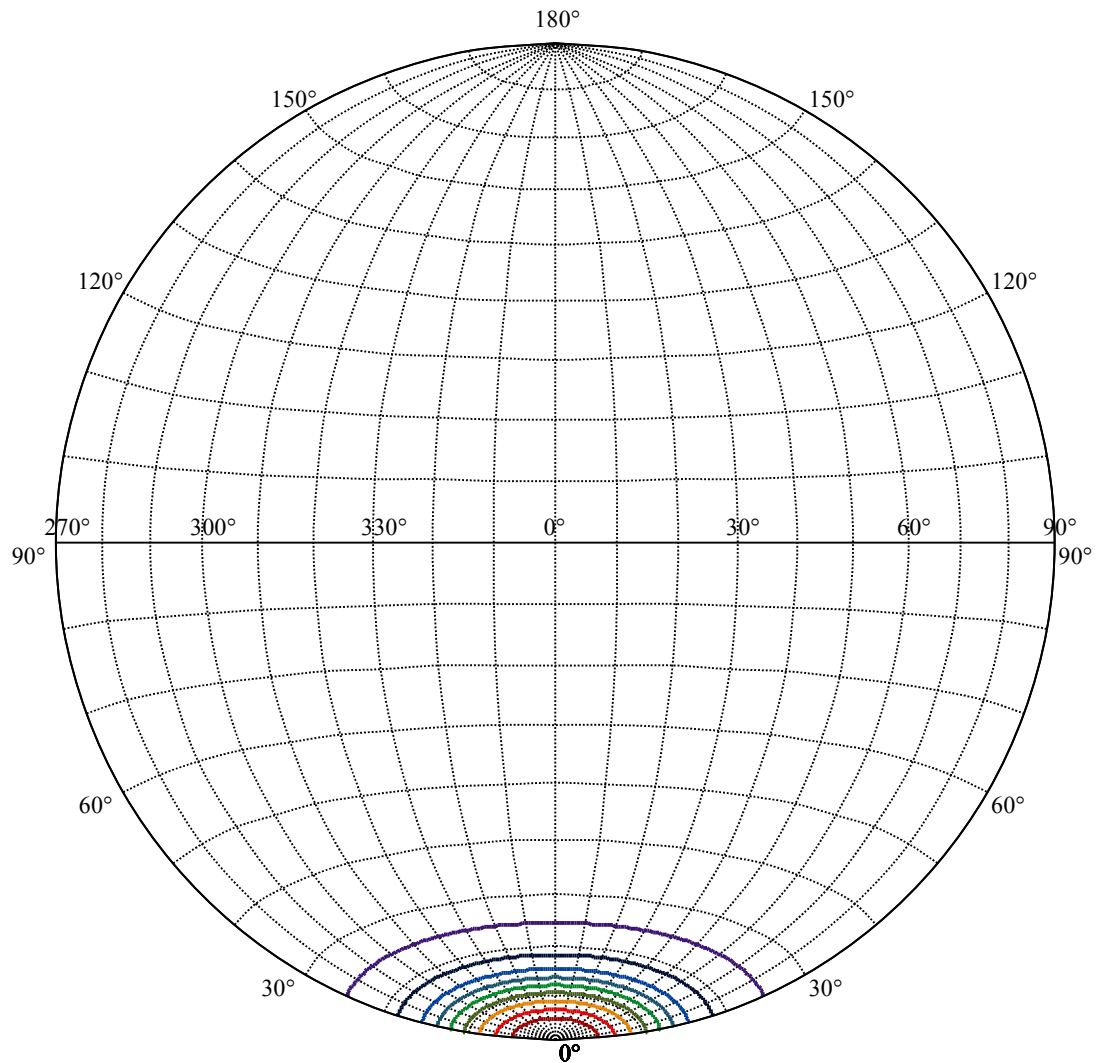
ZONAL LUMEN SUMMARY

0-10	980.48
10-20	645.06
20-30	413.72
30-40	160.87
40-50	10.04
50-60	10.21
60-70	10.60
70-80	10.86
80-90	5.49
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









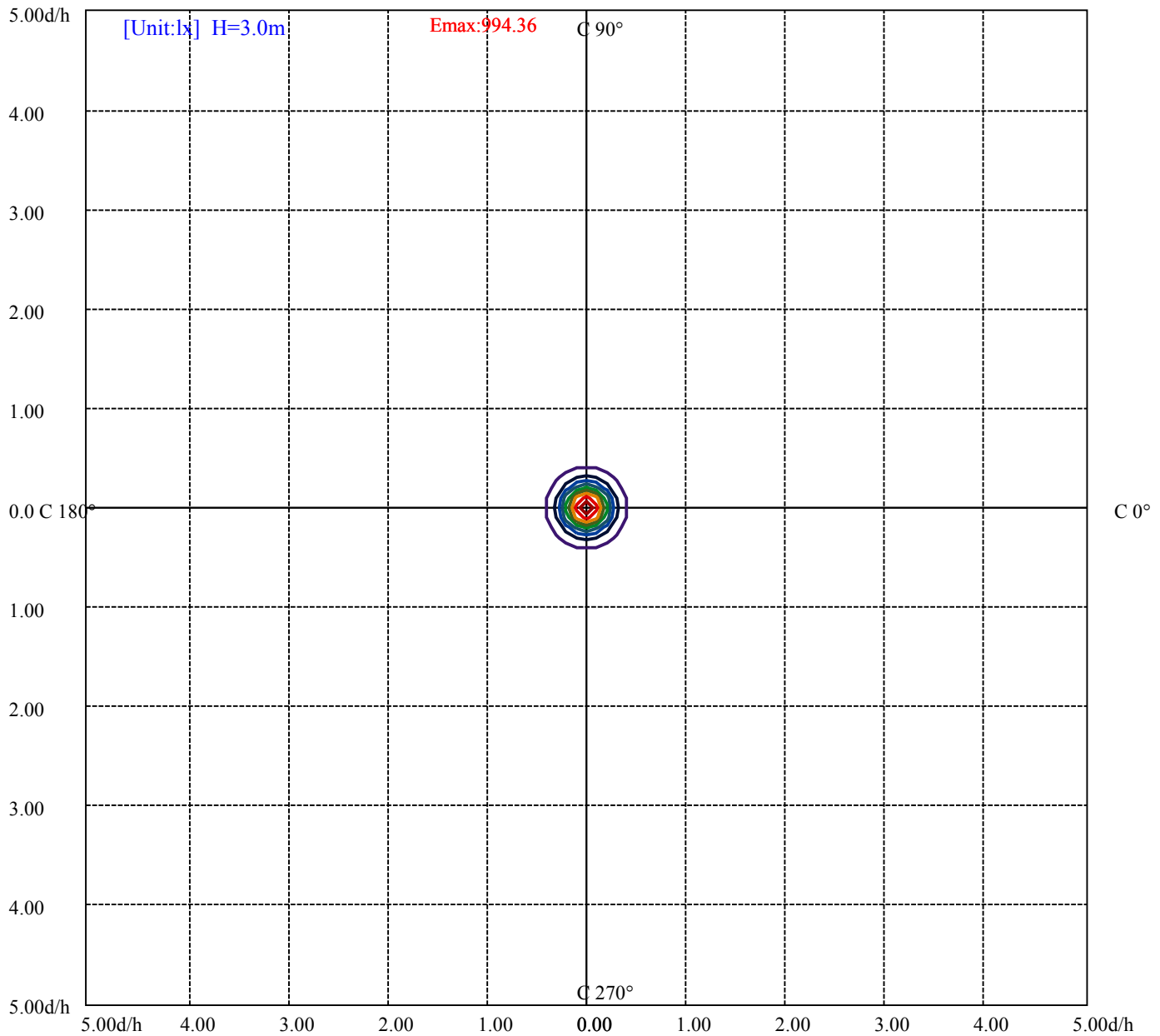
House

[Unit:cd]

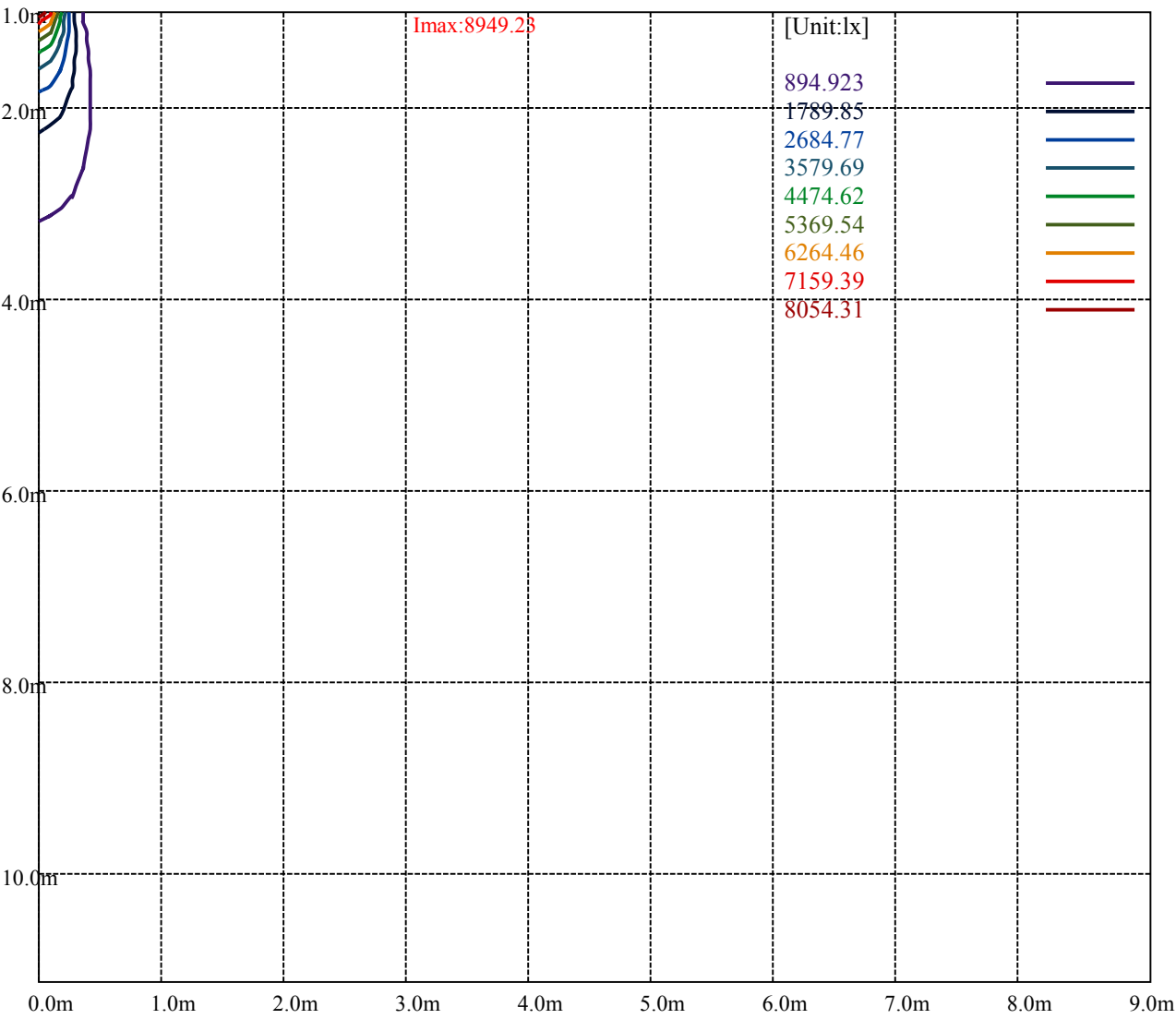
Road

Imax:8949.23

(10%Imax)	894.923	—
(20%Imax)	1789.85	—
(30%Imax)	2684.77	—
(40%Imax)	3579.69	—
(50%Imax)	4474.62	—
(60%Imax)	5369.54	—
(70%Imax)	6264.46	—
(80%Imax)	7159.39	—
(90%Imax)	8054.31	—



(10%Emax) 99.43567	—
(20%Emax) 198.8711	—
(30%Emax) 298.3067	—
(40%Emax) 397.7422	—
(50%Emax) 497.1778	—
(60%Emax) 596.6133	—
(70%Emax) 696.05	—
(80%Emax) 795.4856	—
(90%Emax) 894.9211	—



Luminance Table

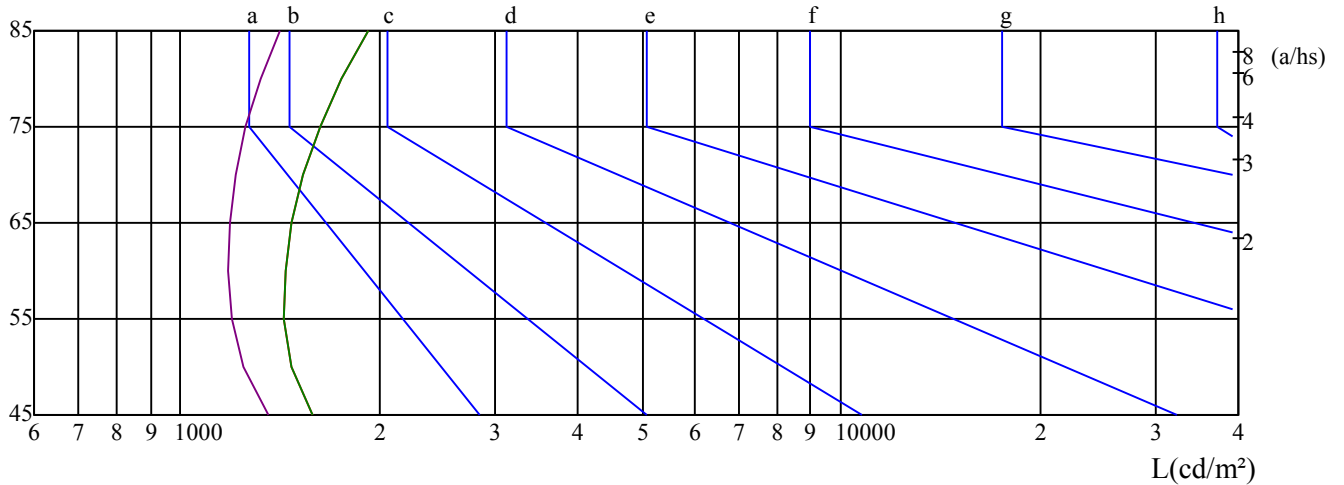
γ	45	50	55	60	65	70	75	80	85
C0	1581	1468	1436	1443	1475	1536	1625	1750	1926
C45	1359	1243	1197	1183	1188	1213	1256	1319	1410
C90	1581	1468	1436	1443	1475	1536	1625	1750	1926

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3546	3546	3546	5594	5594	5594	16338	16338	16338

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

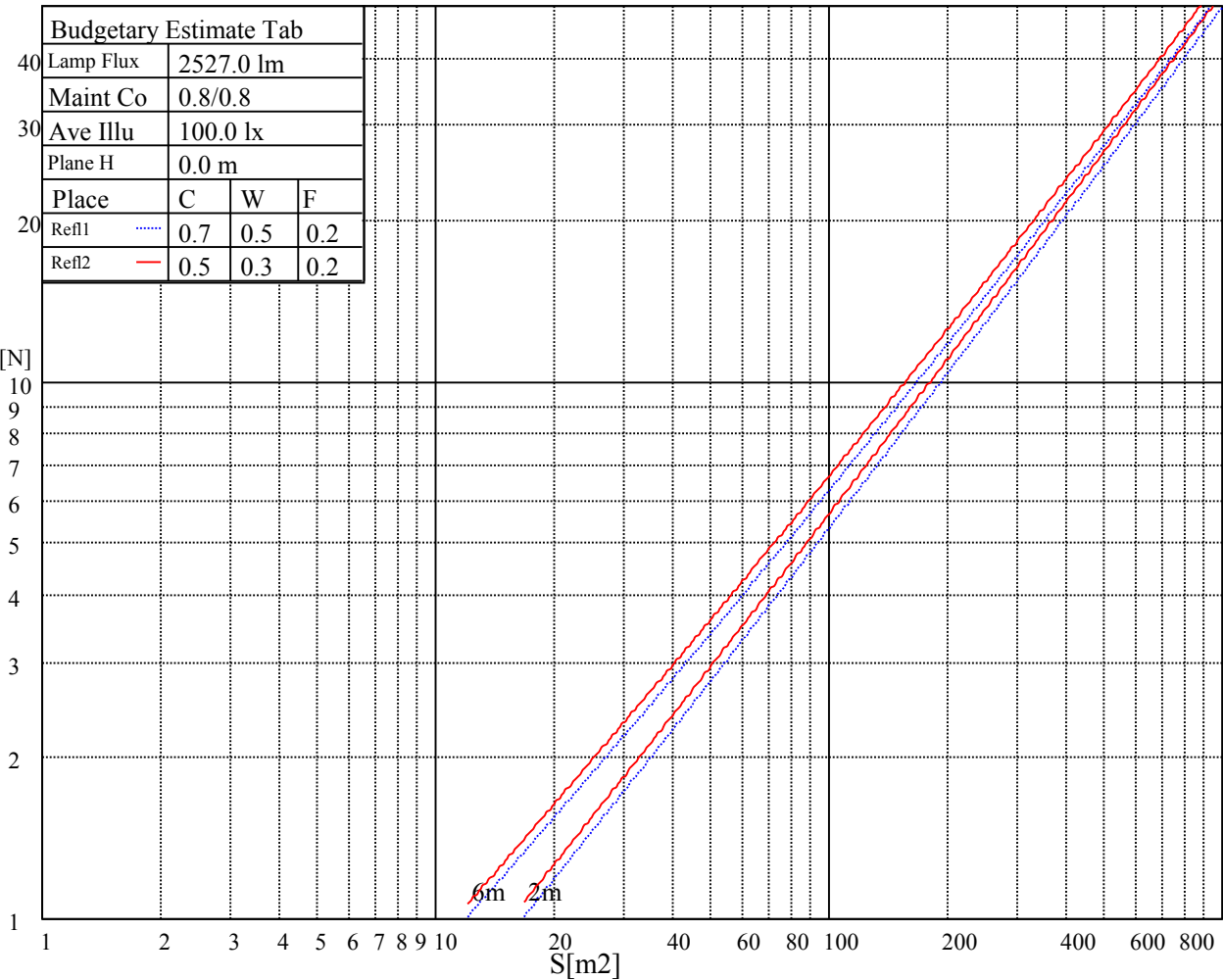
 $\gamma(^{\circ})$ 

C0 ———

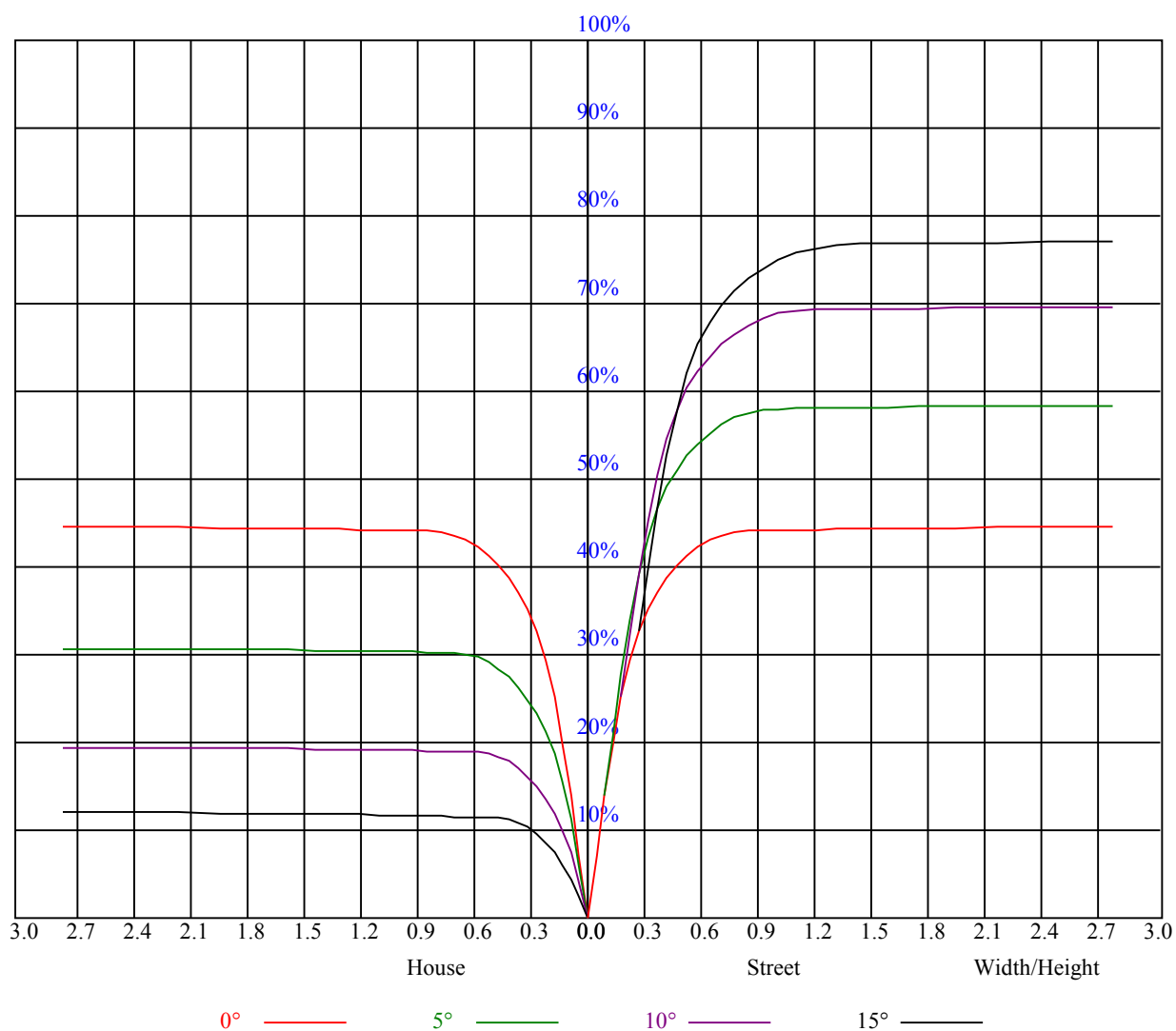
C45 ———

C90 ———

Illumination assessment according UGR											
Rf of Ceiling		70	70	50	50	30	70	70	50	50	30
Rf of Wall		50	30	50	30	30	50	30	50	30	30
Rf of Floor		20	20	20	20	20	20	20	20	20	20
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	-0.28	0.63	0.08	0.94	1.26	-0.28	0.63	0.08	0.94	1.26
	3H	2.00	2.80	2.38	3.14	3.51	2.01	2.81	2.39	3.15	3.52
	4H	3.23	3.98	3.64	4.33	4.73	3.24	3.99	3.65	4.34	4.73
	6H	4.54	5.22	4.96	5.60	5.99	4.55	5.23	4.97	5.60	6.00
	8H	5.19	5.83	5.63	6.22	6.63	5.20	5.83	5.63	6.23	6.64
	12H	6.19	6.81	6.63	7.19	7.62	6.20	6.81	6.64	7.19	7.63
4H	2H	0.21	0.96	0.62	1.31	1.70	0.21	0.96	0.62	1.31	1.70
	3H	2.78	3.40	3.20	3.81	4.21	2.79	3.40	3.21	3.81	4.22
	4H	4.19	4.74	4.63	5.16	5.61	4.20	4.75	4.64	5.17	5.62
	6H	5.60	6.06	6.07	6.51	6.99	5.60	6.07	6.07	6.52	7.00
	8H	6.36	6.79	6.84	7.25	7.72	6.36	6.80	6.84	7.25	7.73
	12H	7.36	7.73	7.85	8.22	8.70	7.36	7.74	7.86	8.23	8.71
8H	4H	4.63	5.07	5.11	5.52	5.99	4.64	5.07	5.12	5.53	6.00
	6H	6.27	6.61	6.78	7.12	7.61	6.28	6.62	6.79	7.12	7.61
	8H	7.19	7.49	7.72	8.02	8.51	7.19	7.50	7.73	8.02	8.52
	12H	8.32	8.58	8.85	9.08	9.66	8.32	8.58	8.85	9.08	9.67
12H	4H	4.72	5.09	5.21	5.58	6.06	4.73	5.10	5.22	5.59	6.07
	6H	6.64	6.75	6.98	7.22	7.77	6.65	6.75	6.99	7.23	7.78
	8H	7.46	7.72	7.98	8.22	8.80	7.46	7.72	7.98	8.22	8.80
Variation with the observer position at spacings:											
S = 1.0H		5.6/-7.5					5.6/-7.5				
S = 1.5H		7.9/-5.8					7.9/-5.8				
S = 2.0H		9.5/-4.6					9.5/-4.6				
Standard tables:		BK2					BK2				
Uncorrected UGR		-3.9					-3.9				



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	1.08	1.08	1.08	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.00	0.97	0.95	0.98	0.95	0.93	0.94	0.92	0.90	0.91	0.89	0.88	0.87	0.86	0.85	0.83
2	0.95	0.91	0.88	0.93	0.90	0.87	0.90	0.88	0.85	0.88	0.85	0.84	0.85	0.83	0.82	0.80
3	0.90	0.86	0.83	0.89	0.86	0.83	0.87	0.84	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.78
4	0.87	0.82	0.79	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.75
5	0.83	0.79	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.74	0.78	0.76	0.74	0.73
6	0.80	0.76	0.73	0.80	0.76	0.73	0.79	0.75	0.72	0.77	0.74	0.72	0.76	0.74	0.71	0.70
7	0.78	0.74	0.71	0.77	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.72	0.69	0.68
8	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.72	0.70	0.67	0.67
9	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.65
10	0.71	0.67	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.63



Intensity data(cd)										Appendix Page: 15 Total:15
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	
0.0	8969.06	8191.69	5649.19	2971.69	1337.63	868.50	780.75	486.56	24.81	
45.0	8902.69	8537.63	6334.31	3365.44	1571.63	892.13	787.50	599.06	50.23	
90.0	8966.81	8055.56	5787.56	2856.94	1090.80	859.28	772.26	472.56	21.26	
135.0	8958.38	8416.69	6206.06	3189.38	1598.06	900.56	786.94	570.94	51.86	
180.0	8969.06	8062.31	5679.56	2835.00	1095.75	871.65	777.60	508.05	24.64	
225.0	8902.69	7502.63	5067.00	2427.19	1076.18	839.42	763.59	331.88	22.89	
270.0	8966.81	8076.94	5731.88	2846.81	1368.00	873.00	776.81	474.75	25.76	
315.0	8958.38	7712.44	5052.94	2345.06	1106.44	839.03	761.85	375.19	23.34	
360.0	8969.06	8191.69	5649.19	2971.69	1337.63	868.50	780.75	486.56	24.81	
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	
0.0	12.83	11.81	11.14	10.80	10.58	10.35	10.18	10.07	10.01	
45.0	14.01	11.98	11.31	10.97	10.63	10.46	10.29	10.18	10.29	
90.0	12.77	11.87	11.25	10.86	10.58	10.35	10.18	10.07	10.01	
135.0	13.67	11.98	11.36	10.97	10.63	10.41	10.24	10.13	10.01	
180.0	12.83	11.81	11.31	10.91	10.58	10.41	10.24	10.07	10.01	
225.0	12.71	11.76	11.19	10.80	10.58	10.41	10.24	10.18	10.01	
270.0	13.05	11.93	11.31	10.86	10.58	10.35	10.24	10.07	10.01	
315.0	12.60	11.70	11.14	10.74	10.46	10.29	10.13	10.07	10.01	
360.0	12.83	11.81	11.14	10.80	10.58	10.35	10.18	10.07	10.01	
C/γ(°)	90.0									
0.0	10.01									
45.0	9.96									
90.0	9.96									
135.0	9.96									
180.0	9.96									
225.0	9.96									
270.0	9.96									
315.0	9.96									
360.0	10.01									