



NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

NATA

LumCAT: 2-1299-N

Luminaire: 92.70.074.00+92.70.059.00

Report No: NATA0100

Test No: GC2019012603

LampCAT: CREE CXA1816

Lamp flux(lm): 2071.0

Number of Lamps: 1

Length(mm): 70

Phm Type: C

Voltage(V): 37.0000

Current(A): 0.6000

Power (W): 22.2000

PF: 1.0000

Ballast type: DC

Width(mm): 70

Height(mm): 0

Photometric Results

Lumens(lm): 1572.85

Efficiency(%): 75.95%

Lumens(lm)/Power(W): 72.83

Central intensity(cd): 7593.469

Maximum intensity(cd): 7593.469

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=20.5

[C90/270]Total=20.5

Field angle(10%Imax): [C0/180]Total=41.8

[C90/270]Total=41.8

Maximum s/h(1/2): C0_180=0.35 C90_270=0.35

Maximum s/h(1/4): C0_180=0.36 C90_270=0.36

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 78.07%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 95.118%

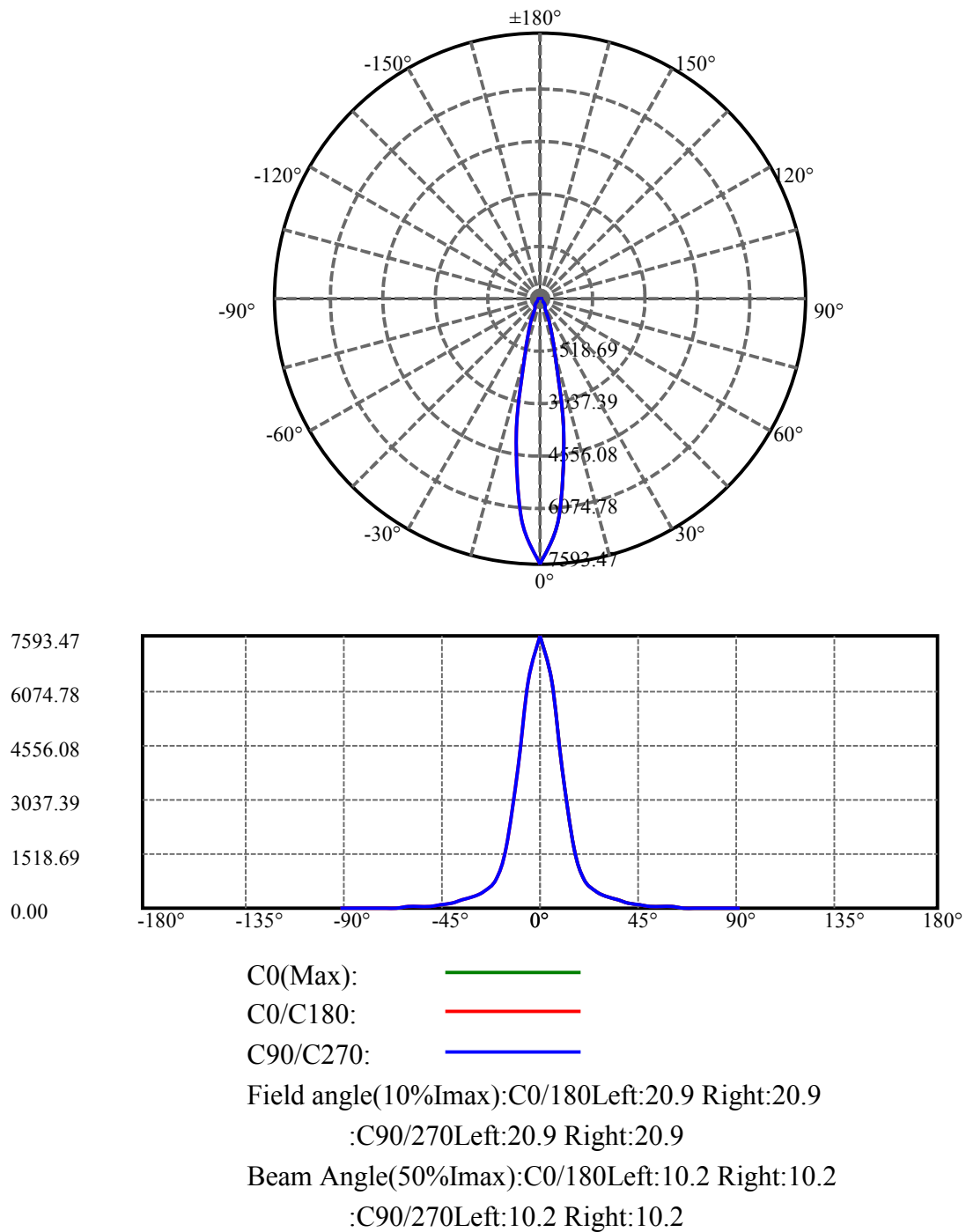
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7593.469	45.410	45.41	2.193%	2.887%
5.0	6327.211	302.272	347.682	14.595%	22.105%
10.0	3897.211	370.948	718.631	17.912%	45.690%
15.0	1721.257	244.192	962.823	11.791%	61.215%
20.0	818.930	153.528	1116.351	7.413%	70.976%
25.0	492.954	114.194	1230.545	5.514%	78.237%
30.0	332.044	91.003	1321.548	4.394%	84.023%
35.0	221.006	69.484	1391.032	3.355%	88.440%
40.0	153.260	53.999	1445.031	2.607%	91.874%
45.0	95.653	37.074	1482.105	1.790%	94.231%
50.0	61.748	25.928	1508.033	1.252%	95.879%
55.0	39.157	17.582	1525.615	.849%	96.997%
60.0	25.741	12.219	1537.835	.590%	97.774%
65.0	17.824	8.855	1546.689	.428%	98.337%
70.0	15.047	7.750	1554.44	.374%	98.830%
75.0	12.621	6.682	1561.122	.323%	99.255%
80.0	10.336	5.579	1566.701	.269%	99.609%
85.0	7.995	4.365	1571.067	.211%	99.887%
90.0	6.497	1.781	1572.848	.086%	100.000%

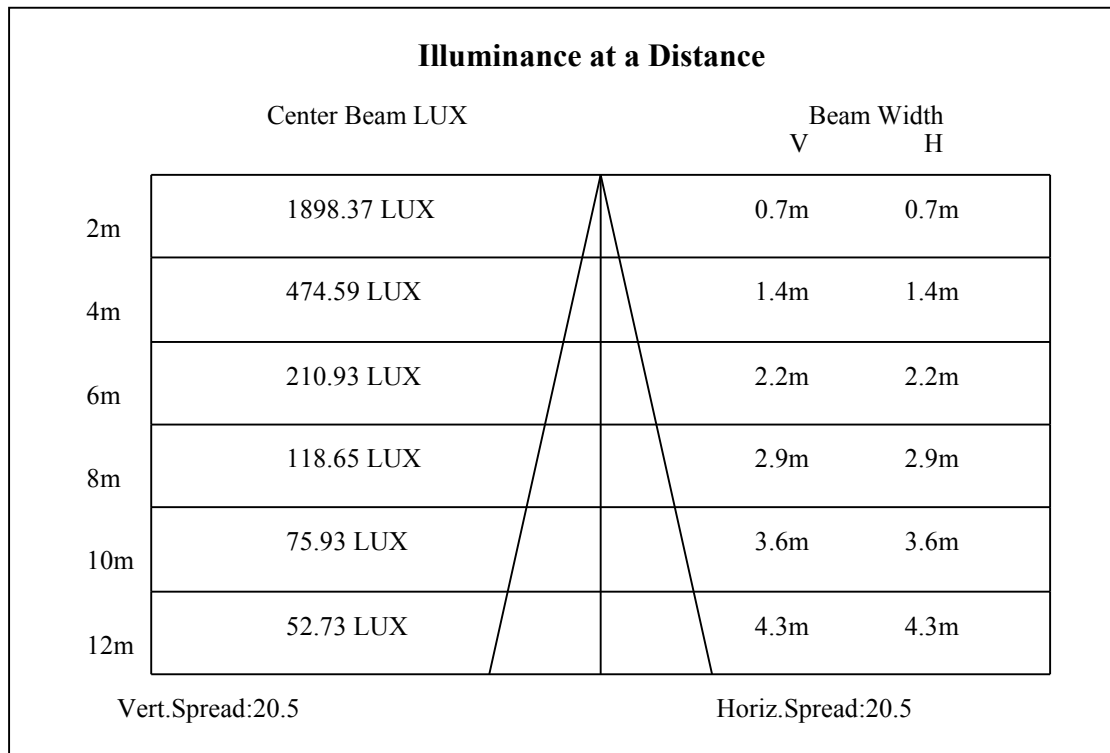
ZONAL LUMEN SUMMARY

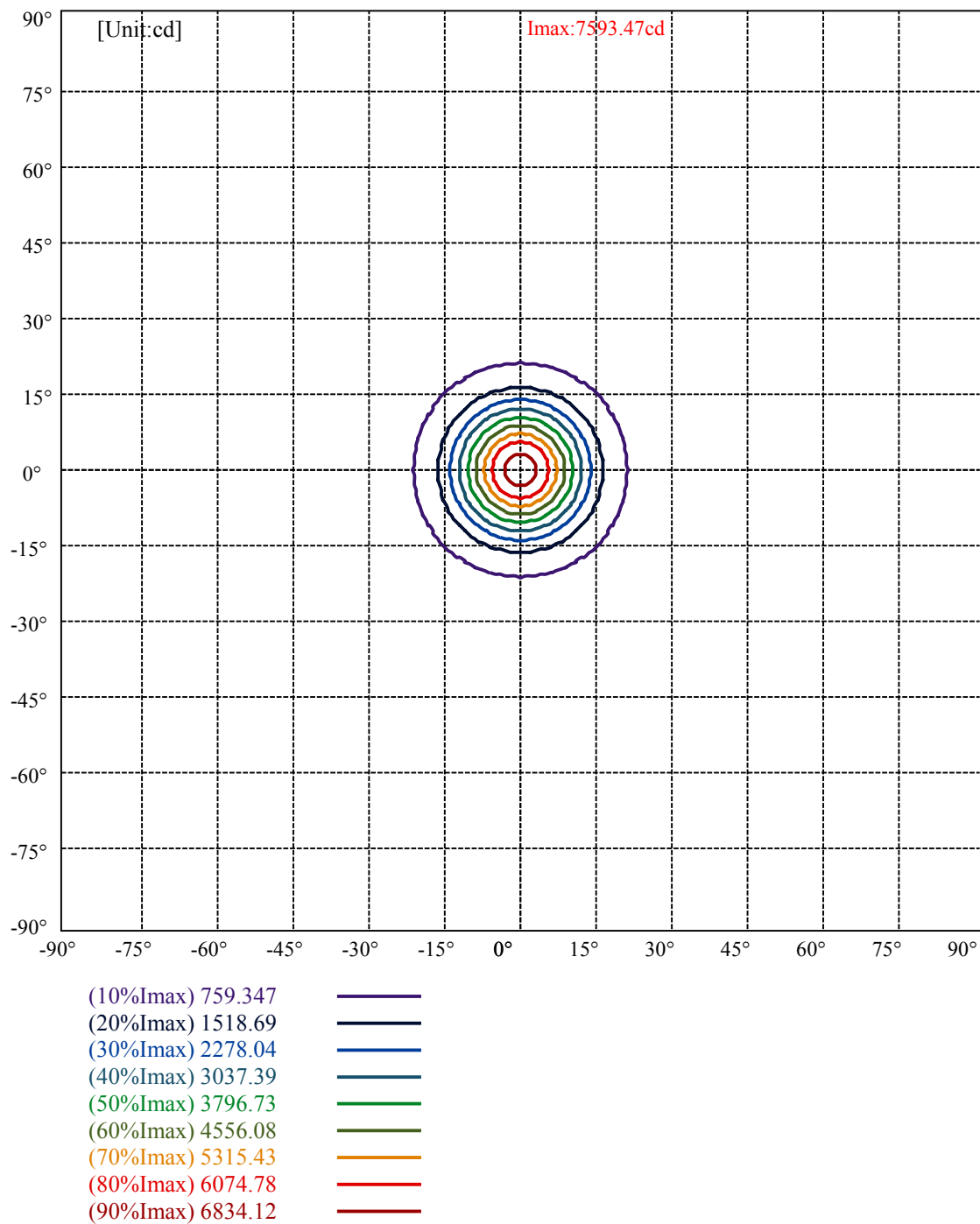
Zone	Lumens	%Lamp	%Fixt
0-30	1321.55	63.81%	84.02%
0-40	1445.03	69.77%	91.87%
0-60	1537.83	74.26%	97.77%
0-90	1571.07	75.86%	99.89%
0-120	1571.07	75.86%	99.89%
0-180	1572.85	75.95%	100.00%
60-90	45.45	2.19%	2.89%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-26.52	1258.28	60.76%	80.00%

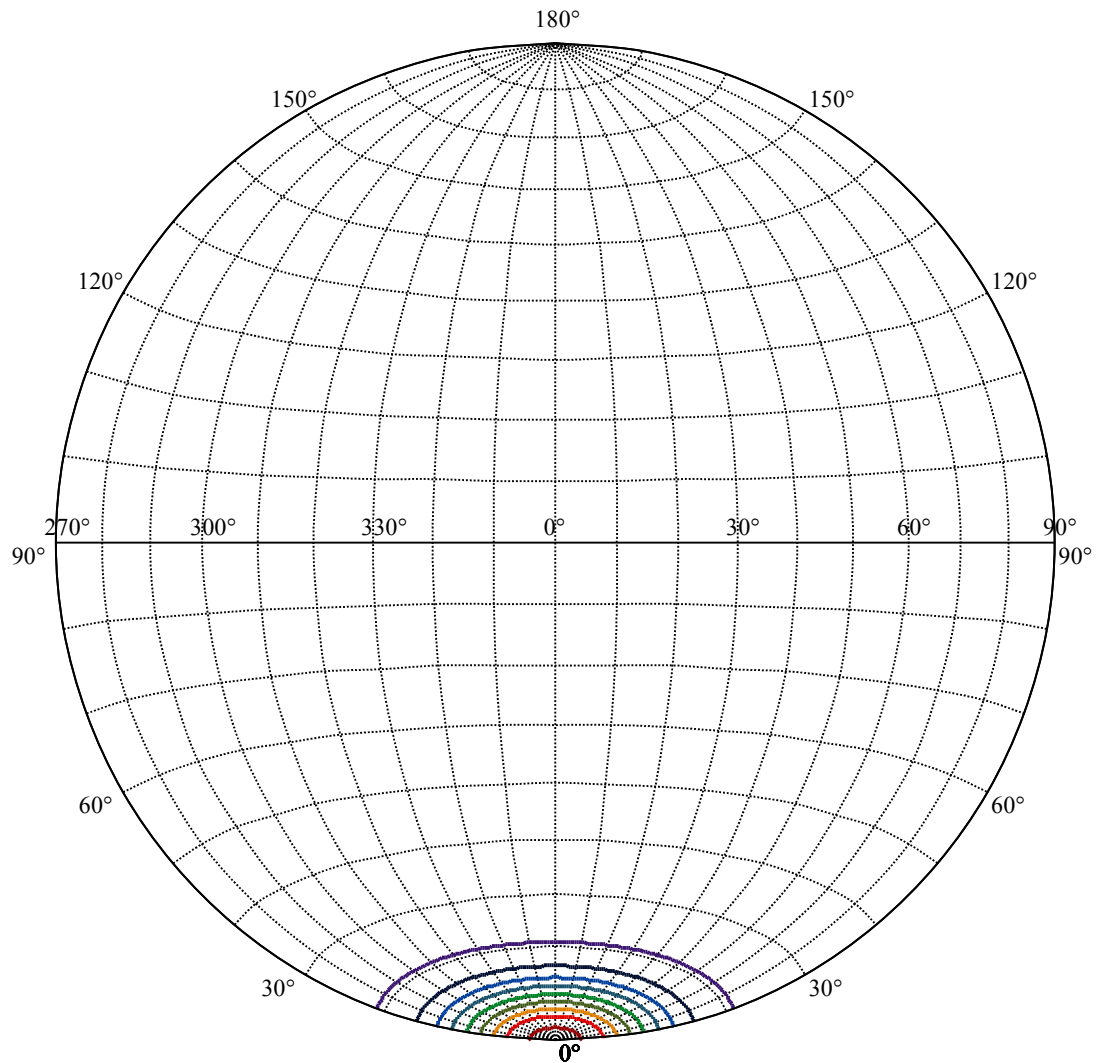
ZONAL LUMEN SUMMARY

0-10	718.63
10-20	397.72
20-30	205.20
30-40	123.48
40-50	63.00
50-60	29.80
60-70	16.61
70-80	12.26
80-90	4.37
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









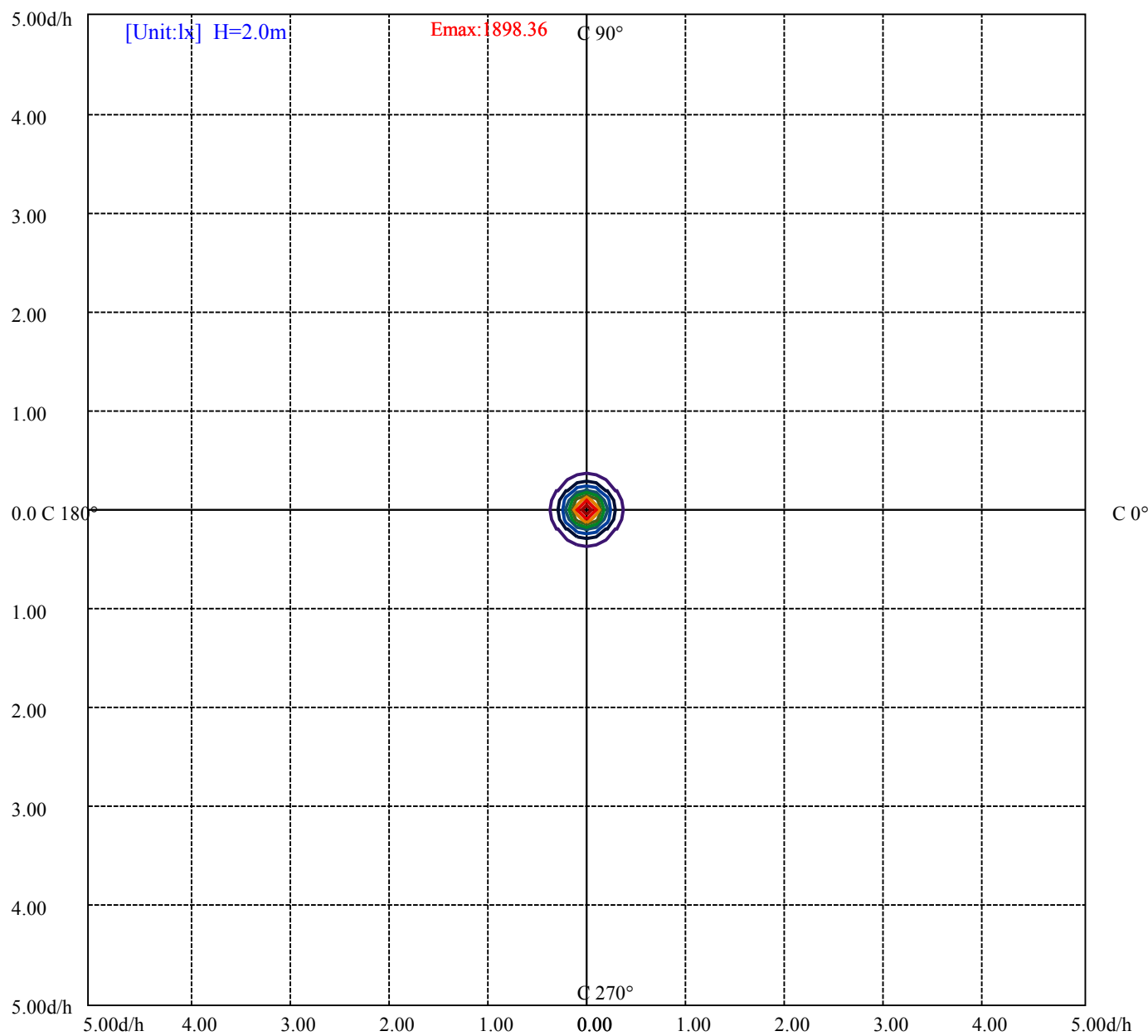
House

[Unit:cd]

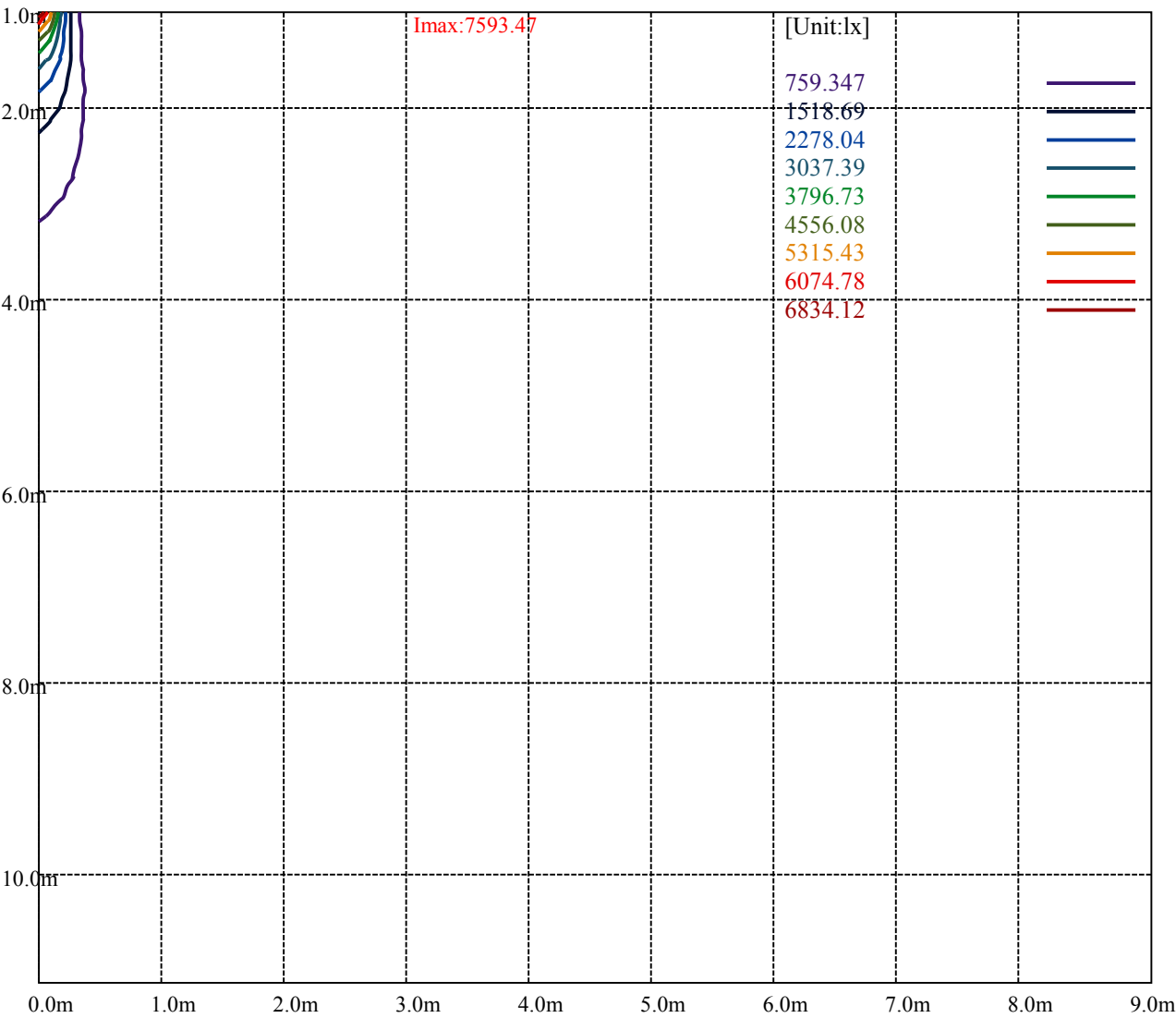
Road

Imax:7593.47

(10%Imax)	759.347	—
(20%Imax)	1518.69	—
(30%Imax)	2278.04	—
(40%Imax)	3037.39	—
(50%Imax)	3796.73	—
(60%Imax)	4556.08	—
(70%Imax)	5315.43	—
(80%Imax)	6074.78	—
(90%Imax)	6834.12	—



(10%E _{max}) 189.8358	
(20%E _{max}) 379.6725	
(30%E _{max}) 569.5075	
(40%E _{max}) 759.3425	
(50%E _{max}) 949.18	
(60%E _{max}) 1139.015	
(70%E _{max}) 1328.85	
(80%E _{max}) 1518.688	
(90%E _{max}) 1708.522	



Luminance Table

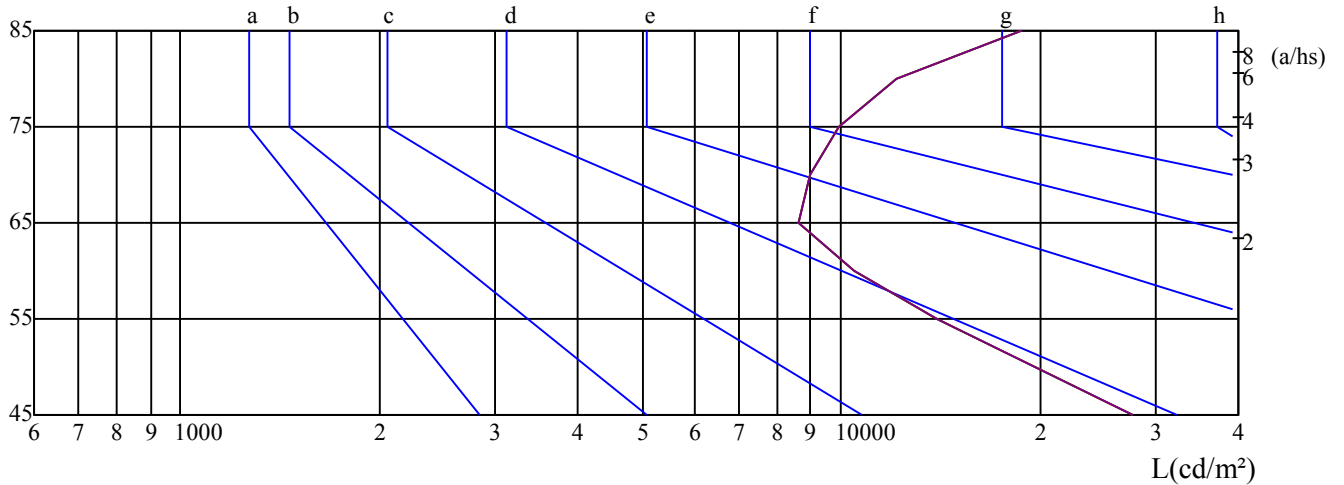
γ	45	50	55	60	65	70	75	80	85
C0	27607	19605	13932	10507	8607	8978	9952	12147	18720
C45	27607	19605	13932	10507	8607	8978	9952	12147	18720
C90	27607	19605	13932	10507	8607	8978	9952	12147	18720

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
8607	8607	8607	9952	9952	9952	18720	18720	18720

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

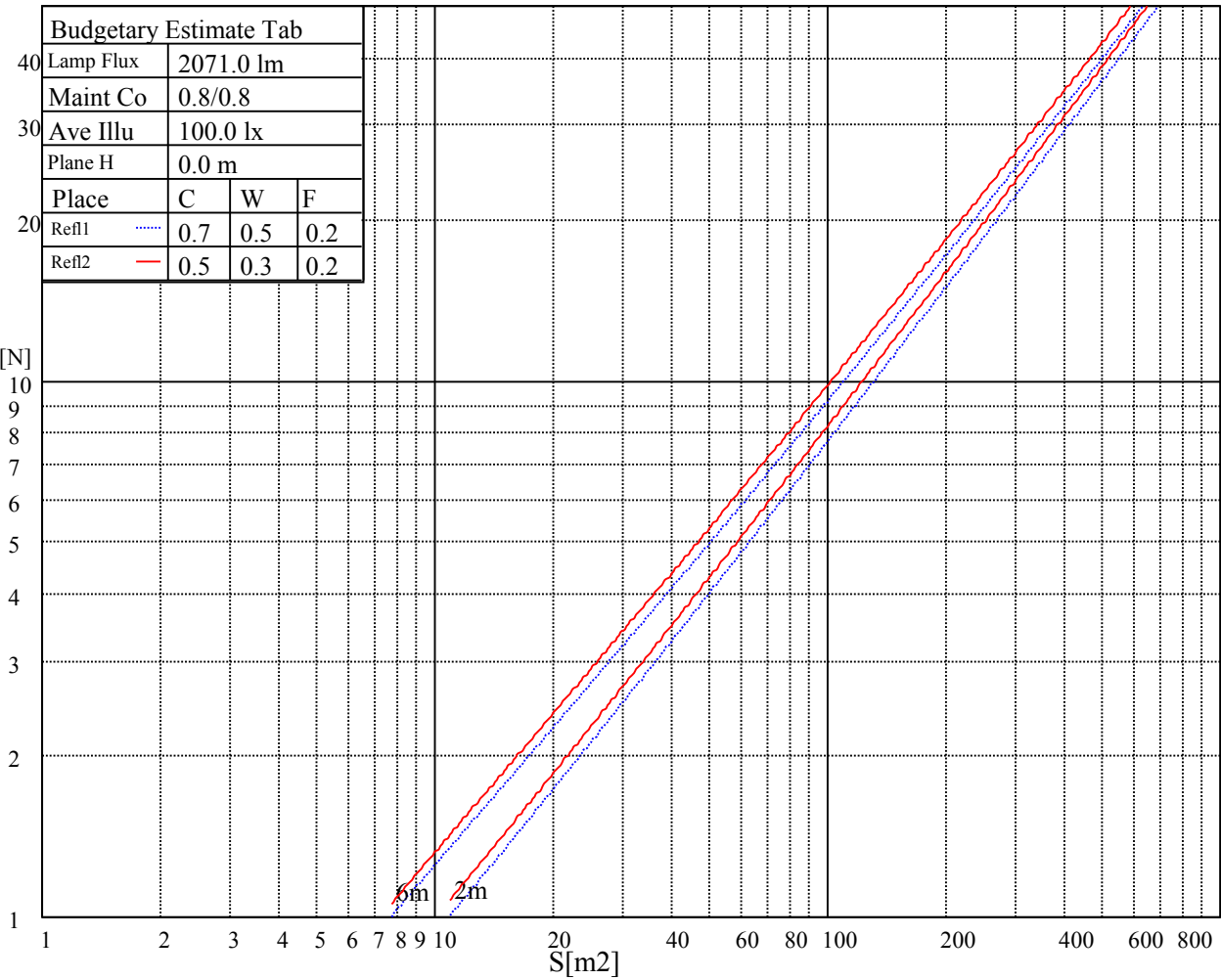
 $\gamma(^{\circ})$ 

C0 ———

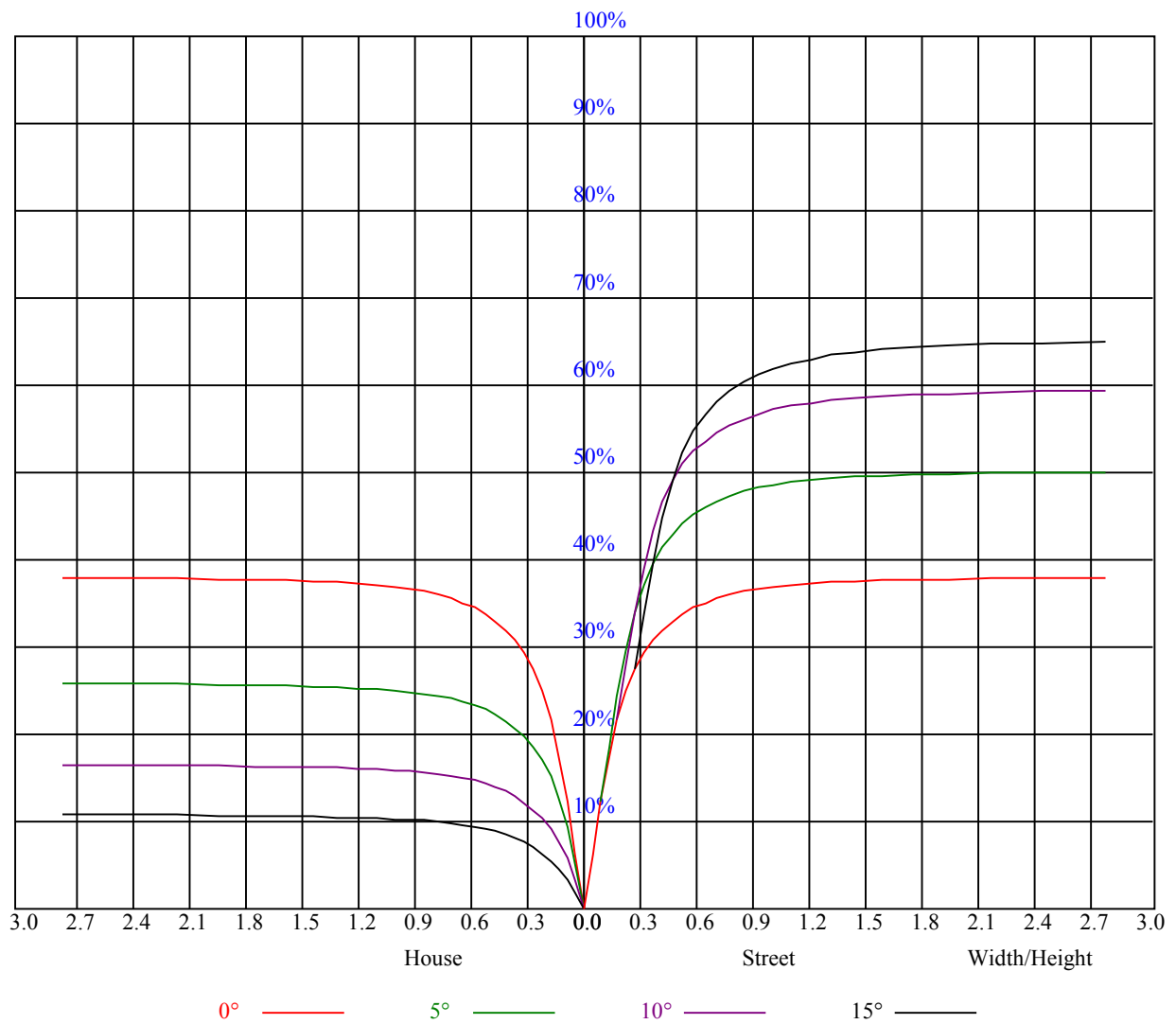
C45 ———

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	12.80	13.82	13.17	14.13	14.45	12.84	13.86	13.21	14.17	14.49
	3H	13.96	14.85	14.34	15.19	15.55	13.98	14.87	14.36	15.21	15.58
	4H	14.65	15.48	15.05	15.83	16.22	14.66	15.49	15.07	15.84	16.23
	6H	15.43	16.19	15.85	16.57	16.96	15.44	16.20	15.86	16.57	16.97
	8H	15.86	16.57	16.29	16.97	17.38	15.86	16.57	16.30	16.97	17.38
	12H	16.60	17.28	17.03	17.67	18.10	16.60	17.28	17.04	17.67	18.10
4H	2H	13.00	13.83	13.40	14.18	14.57	13.03	13.86	13.44	14.22	14.61
	3H	14.47	15.15	14.89	15.56	15.97	14.49	15.17	14.91	15.58	15.99
	4H	15.37	15.97	15.80	16.40	16.85	15.38	15.98	15.81	16.41	16.86
	6H	16.27	16.79	16.74	17.24	17.71	16.27	16.79	16.74	17.24	17.72
	8H	16.83	17.32	17.31	17.77	18.24	16.83	17.32	17.31	17.77	18.24
	12H	17.64	18.06	18.13	18.55	19.02	17.64	18.06	18.13	18.55	19.03
8H	4H	15.69	16.17	16.17	16.63	17.10	15.70	16.18	16.17	16.63	17.11
	6H	16.86	17.25	17.37	17.75	18.23	16.86	17.24	17.37	17.75	18.23
	8H	17.59	17.94	18.12	18.46	18.96	17.59	17.93	18.12	18.46	18.95
	12H	18.72	19.02	19.25	19.52	20.10	18.72	19.02	19.25	19.52	20.10
12H	4H	15.75	16.17	16.24	16.66	17.13	15.76	16.18	16.25	16.66	17.14
	6H	17.31	17.35	17.54	17.82	18.37	17.30	17.35	17.54	17.82	18.37
	8H	17.85	18.15	18.37	18.65	19.22	17.85	18.14	18.37	18.64	19.22
Variation with the observer position at spacings:											
S = 1.0H		1.5/-1.9					1.5/-1.9				
S = 1.5H		2.6/-2.1					2.6/-2.1				
S = 2.0H		3.9/-2.0					3.9/-2.0				
Standard tables:		BK4					BK4				
Uncorrected UGR		2.3					2.3				



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	0.93	0.93	0.93	0.91	0.91	0.91	0.87	0.87	0.87	0.83	0.83	0.83	0.80	0.80	0.80	0.78
1	0.85	0.82	0.80	0.83	0.81	0.79	0.80	0.78	0.76	0.77	0.75	0.74	0.74	0.73	0.72	0.70
2	0.80	0.77	0.74	0.79	0.76	0.73	0.76	0.74	0.72	0.74	0.72	0.70	0.72	0.70	0.69	0.67
3	0.76	0.72	0.69	0.75	0.72	0.69	0.73	0.70	0.68	0.71	0.69	0.67	0.69	0.67	0.66	0.65
4	0.73	0.69	0.66	0.72	0.68	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.67	0.65	0.63	0.62
5	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.64	0.62	0.66	0.64	0.62	0.65	0.63	0.61	0.60
6	0.67	0.63	0.60	0.67	0.63	0.60	0.65	0.62	0.60	0.64	0.62	0.59	0.63	0.61	0.59	0.58
7	0.65	0.61	0.58	0.64	0.61	0.58	0.63	0.60	0.58	0.63	0.60	0.58	0.62	0.59	0.57	0.56
8	0.63	0.59	0.56	0.62	0.59	0.56	0.62	0.58	0.56	0.61	0.58	0.56	0.60	0.58	0.56	0.55
9	0.61	0.57	0.55	0.61	0.57	0.55	0.60	0.57	0.55	0.59	0.56	0.54	0.59	0.56	0.54	0.53
10	0.59	0.56	0.53	0.59	0.56	0.53	0.58	0.55	0.53	0.58	0.55	0.53	0.57	0.55	0.53	0.52



NATA 2-1299-N

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	7600.50	6521.06	4063.50	1860.19	884.25	524.25	343.69	230.12	157.78		
45.0	7612.31	6324.19	3938.06	1850.63	835.88	499.50	342.00	224.66	155.70		
90.0	7576.88	5918.06	3594.94	1120.56	725.18	461.70	308.64	206.55	147.04		
135.0	7584.19	6716.25	4246.88	1953.00	857.25	507.38	340.88	224.10	159.53		
180.0	7600.50	6182.44	3747.94	1653.75	779.79	471.60	312.19	212.34	145.41		
225.0	7612.31	6382.13	3863.81	1712.81	815.63	488.14	327.32	222.53	152.16		
270.0	7576.88	6607.69	4272.75	1983.38	877.50	523.13	354.94	232.09	161.55		
315.0	7584.19	5965.88	3449.81	1635.75	775.97	467.94	326.70	215.66	146.93		
360.0	7600.50	6521.06	4063.50	1860.19	884.25	524.25	343.69	230.12	157.78		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	99.73	65.64	41.57	26.78	18.06	15.30	12.83	10.52	8.10		
45.0	95.91	62.89	39.49	25.59	17.89	15.13	12.66	10.41	7.93		
90.0	90.56	57.66	36.11	24.41	17.55	14.79	12.49	10.07	7.82		
135.0	98.27	62.94	40.44	26.44	18.17	15.24	12.94	10.52	8.04		
180.0	90.68	60.02	37.86	24.75	17.61	14.85	12.43	10.13	7.93		
225.0	93.66	59.63	38.70	25.09	17.38	14.79	12.43	10.24	8.10		
270.0	102.66	65.14	41.01	27.73	18.23	15.36	12.83	10.69	8.16		
315.0	93.77	60.08	38.08	25.14	17.72	14.91	12.38	10.13	7.88		
360.0	99.73	65.64	41.57	26.78	18.06	15.30	12.83	10.52	8.10		
C/γ(°)	90.0										
0.0	6.47										
45.0	6.53										
90.0	6.53										
135.0	6.47										
180.0	6.47										
225.0	6.53										
270.0	6.53										
315.0	6.47										
360.0	6.47										