



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: 2-1682-M	
Luminaire: 92.70.124.00	
Report No: NATA0100	Voltage(V): 22.5000
Test No: GC2019022210	Current(A): 0.3000
LampCAT: BMTC MA-1313 LES11	Power (W): 6.7500
Lamp flux(lm): 718.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 70	Width(mm): 70
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 632.74
Efficiency(%): 88.13%
Lumens(lm)/Power(W): 94.91
Central intensity(cd): 1418.203
Maximum intensity(cd): 1418.203
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=35.7
[C90/270]Total=35.7
Field angle(10%Imax): [C0/180]Total=68.4
[C90/270]Total=68.4
Maximum s/h(1/2): C0_180=0.58 C90_270=0.58
Maximum s/h(1/4): C0_180=0.61 C90_270=0.61
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.22%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.619%

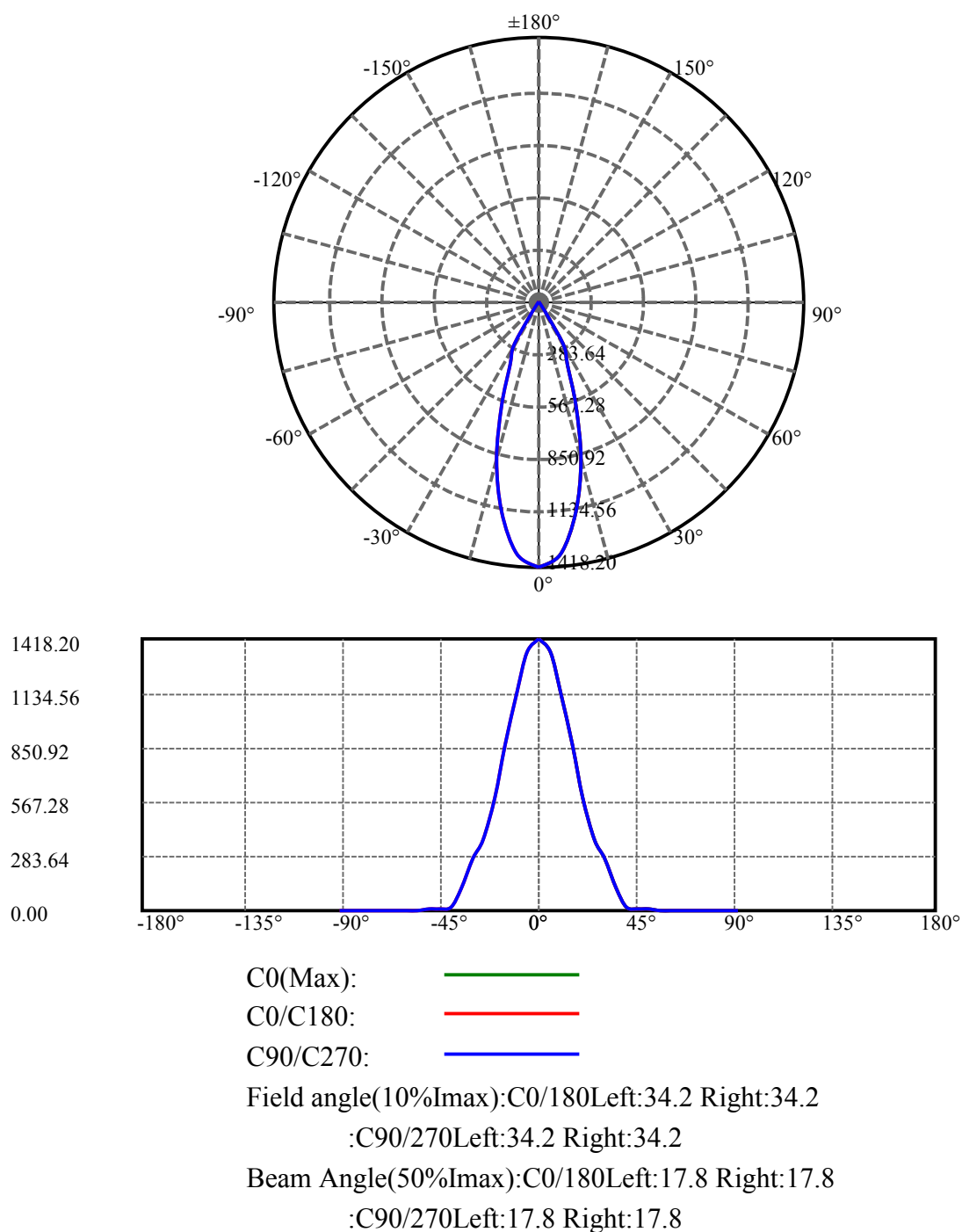
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1418.203	8.481	8.481	1.181%	1.340%
5.0	1347.047	64.353	72.834	8.963%	11.511%
10.0	1136.370	108.163	180.997	15.065%	28.605%
15.0	867.277	123.039	304.036	17.136%	48.051%
20.0	588.382	110.306	414.343	15.363%	65.484%
25.0	373.549	86.534	500.876	12.052%	79.160%
30.0	271.027	74.280	575.156	10.345%	90.899%
35.0	117.035	36.796	611.952	5.125%	96.715%
40.0	16.819	5.926	617.878	.825%	97.651%
45.0	6.005	2.327	620.205	.324%	98.019%
50.0	4.697	1.972	622.177	.275%	98.331%
55.0	3.776	1.695	623.873	.236%	98.599%
60.0	3.143	1.492	625.365	.208%	98.834%
65.0	2.763	1.373	626.737	.191%	99.051%
70.0	2.559	1.318	628.056	.184%	99.260%
75.0	2.489	1.318	629.374	.184%	99.468%
80.0	2.489	1.344	630.717	.187%	99.680%
85.0	2.475	1.351	632.069	.188%	99.894%
90.0	2.447	0.671	632.739	.093%	100.000%

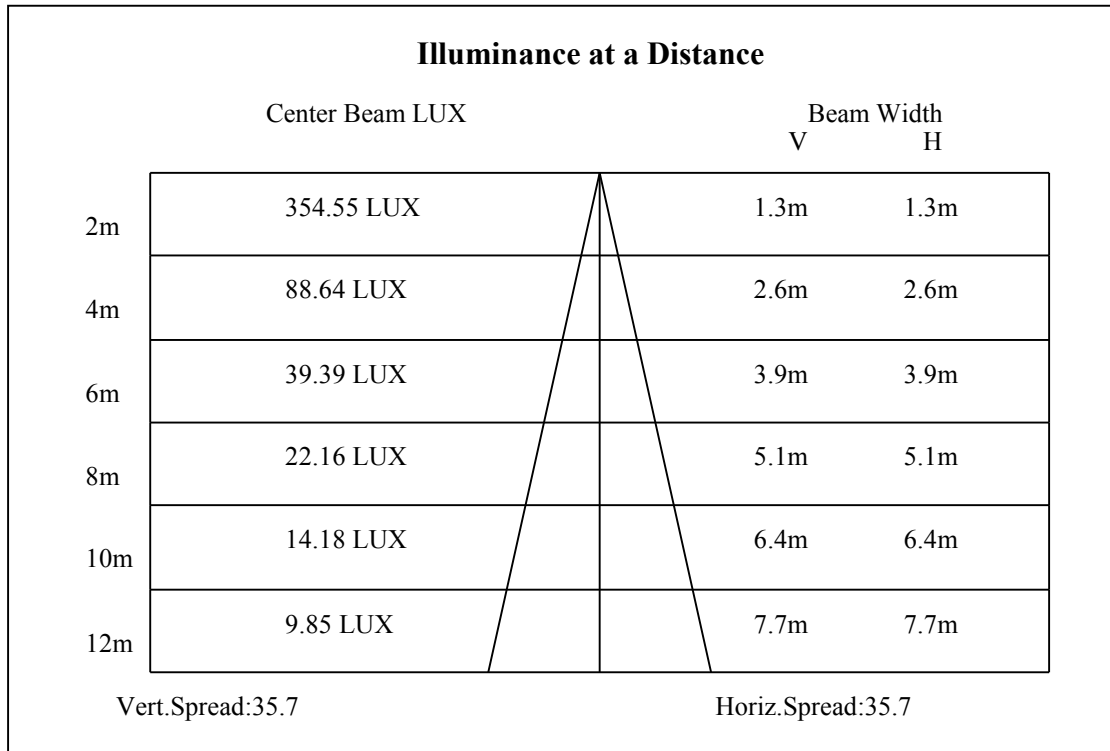
ZONAL LUMEN SUMMARY

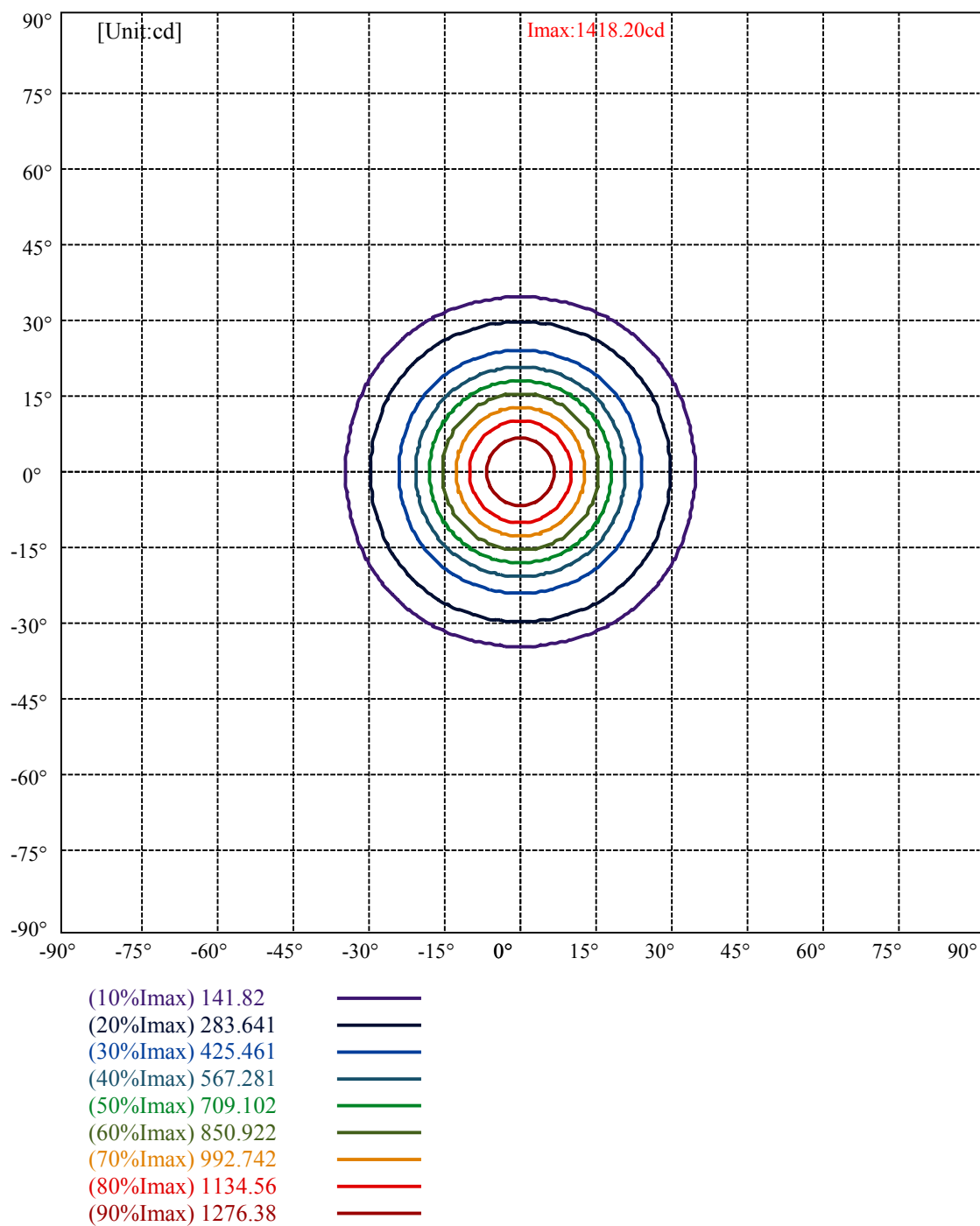
Zone	Lumens	%Lamp	%Fixt
0-30	575.16	80.11%	90.90%
0-40	617.88	86.06%	97.65%
0-60	625.36	87.10%	98.83%
0-90	632.07	88.03%	99.89%
0-120	632.07	88.03%	99.89%
0-180	632.74	88.13%	100.00%
60-90	8.20	1.14%	1.30%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-25.36	506.19	70.50%	80.00%

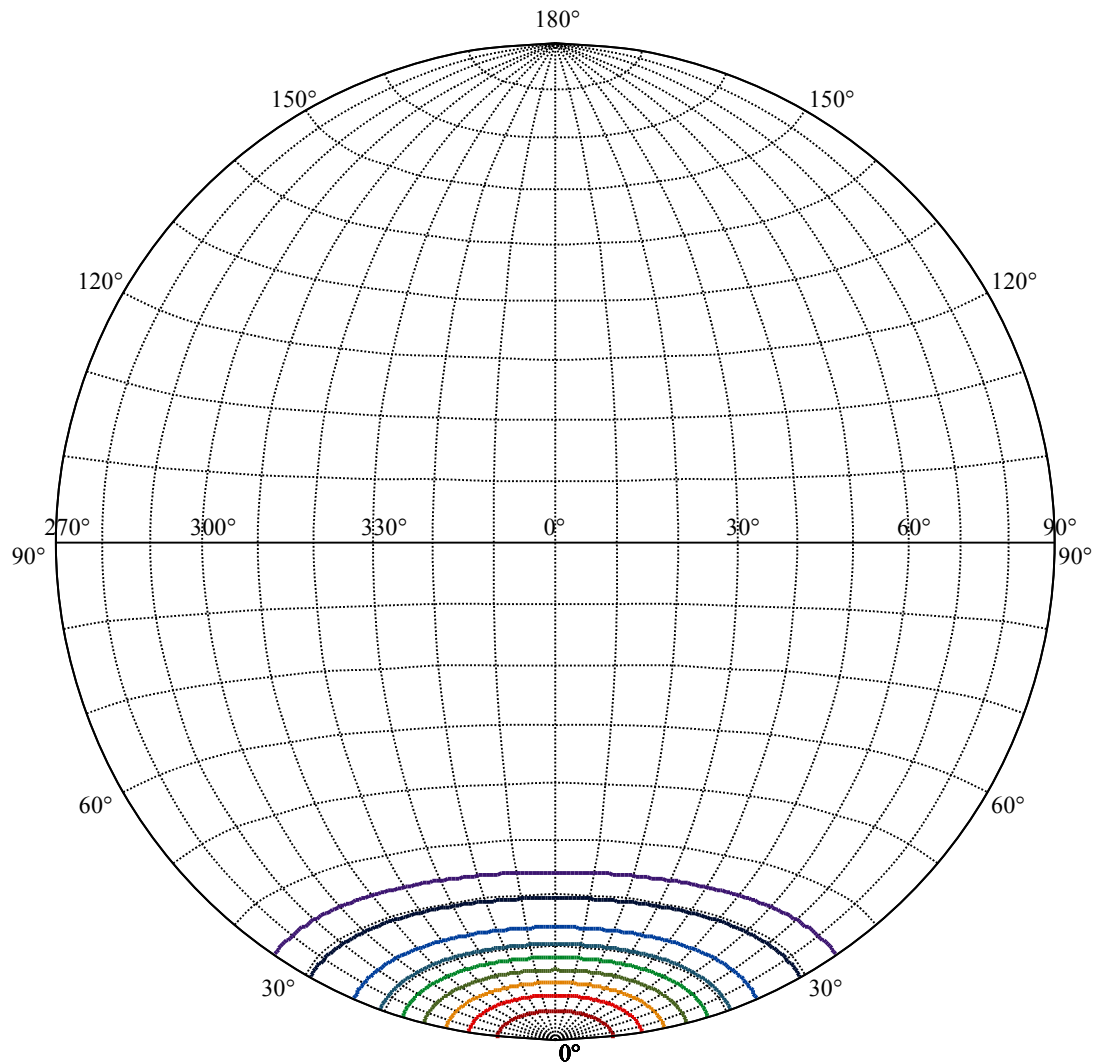
ZONAL LUMEN SUMMARY

0-10	181.00
10-20	233.35
20-30	160.81
30-40	42.72
40-50	4.30
50-60	3.19
60-70	2.69
70-80	2.66
80-90	1.35
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









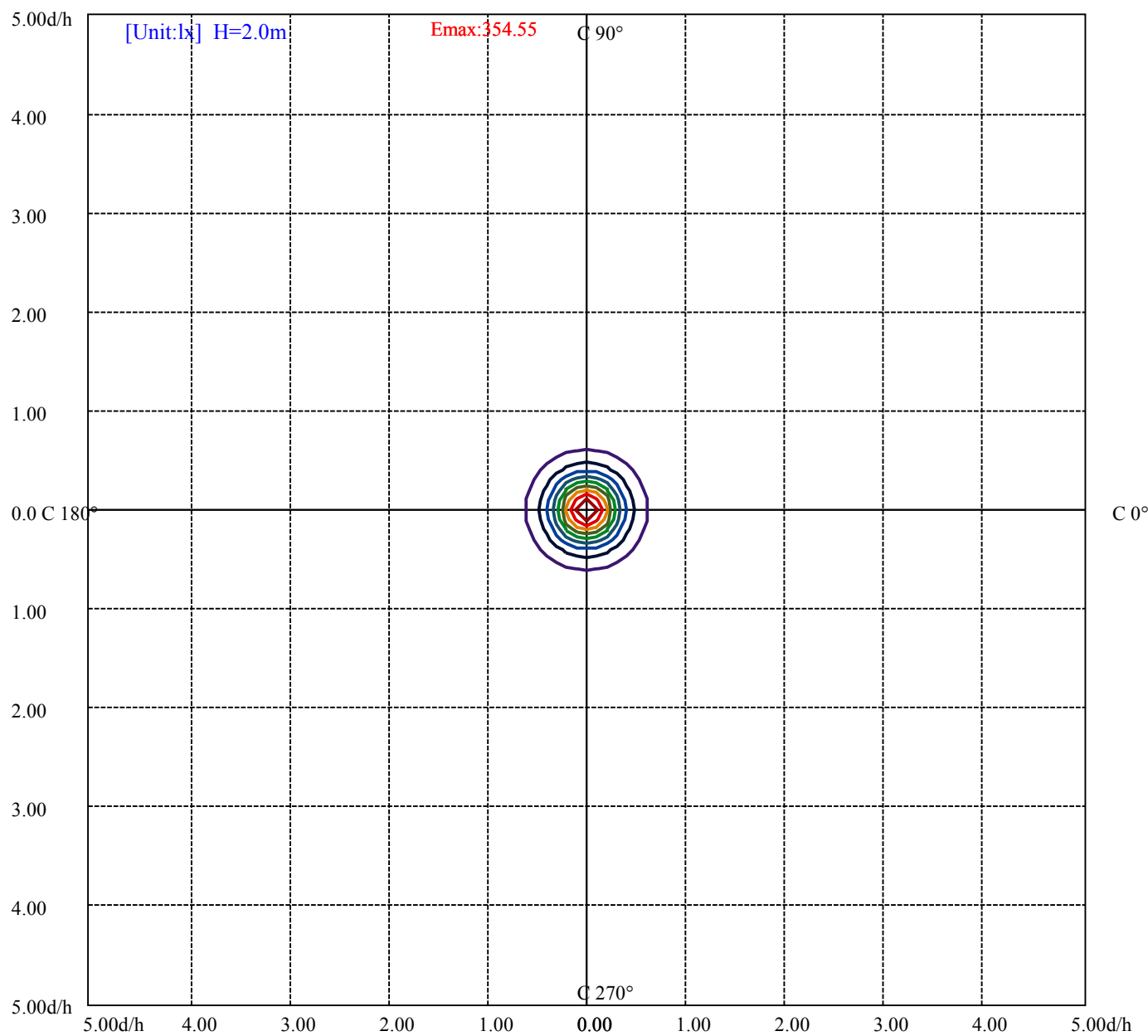
House

[Unit:cd]

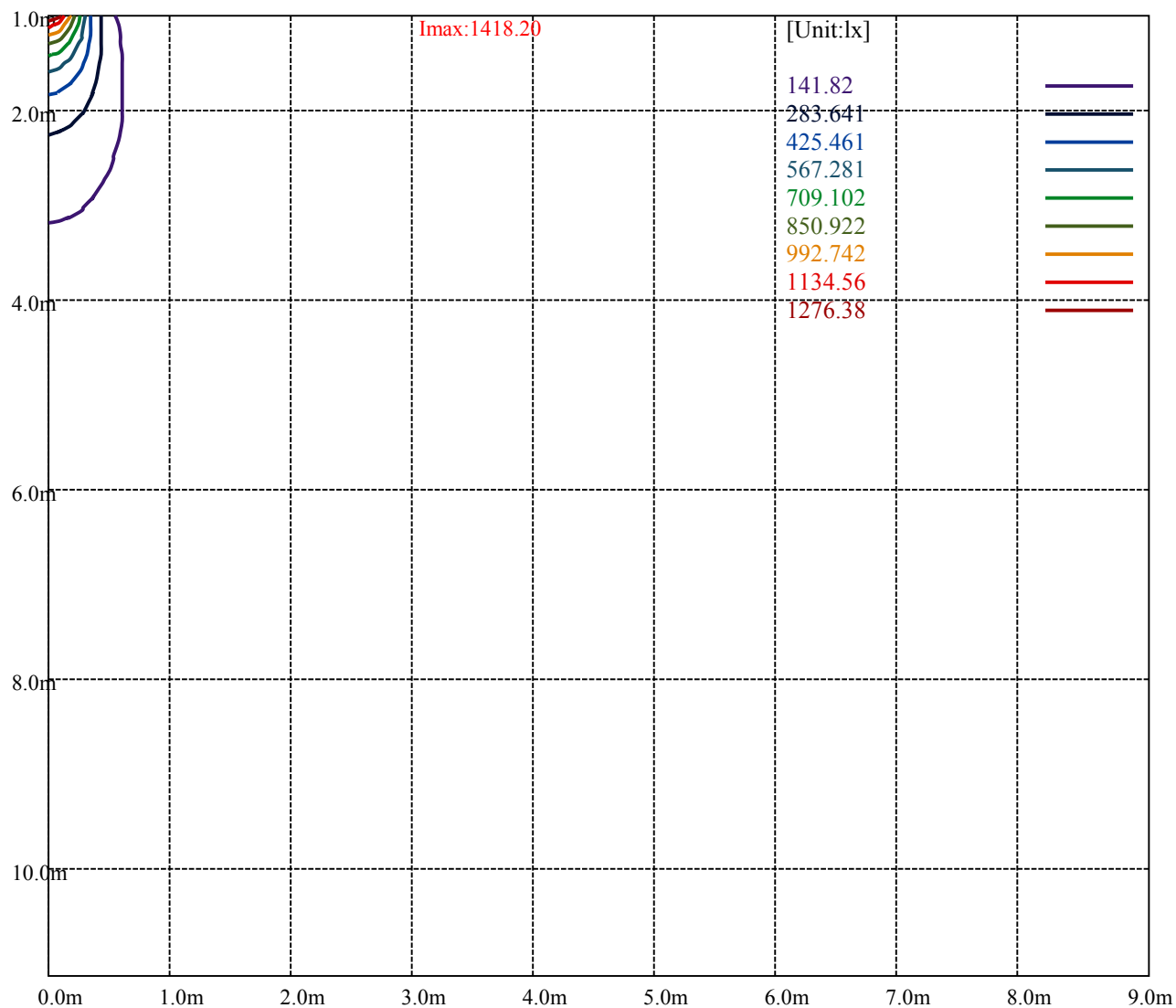
Road

Imax:1418.20

(10%Imax)	141.82	—
(20%Imax)	283.641	—
(30%Imax)	425.461	—
(40%Imax)	567.281	—
(50%Imax)	709.102	—
(60%Imax)	850.922	—
(70%Imax)	992.742	—
(80%Imax)	1134.56	—
(90%Imax)	1276.38	—



(10%E _{max}) 35.455	—
(20%E _{max}) 70.91	—
(30%E _{max}) 106.365	—
(40%E _{max}) 141.82	—
(50%E _{max}) 177.2753	—
(60%E _{max}) 212.7303	—
(70%E _{max}) 248.1853	—
(80%E _{max}) 283.64	—
(90%E _{max}) 319.095	—



Luminance Table

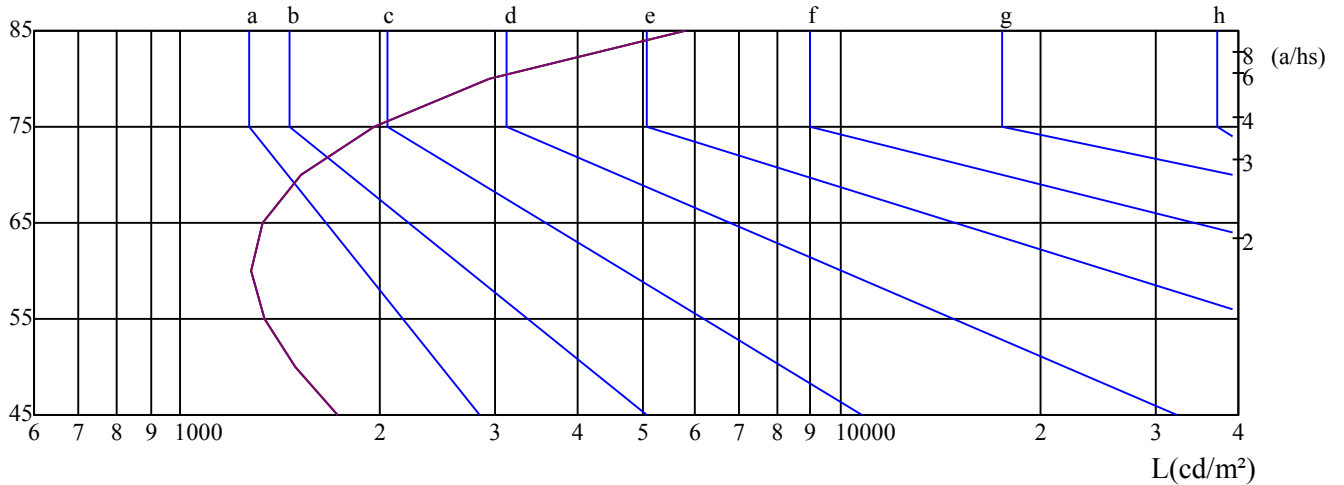
γ	45	50	55	60	65	70	75	80	85
C0	1733	1491	1343	1283	1334	1527	1963	2925	5795
C45	1733	1491	1343	1283	1334	1527	1963	2925	5795
C90	1733	1491	1343	1283	1334	1527	1963	2925	5795

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1334	1334	1334	1963	1963	1963	5795	5795	5795

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

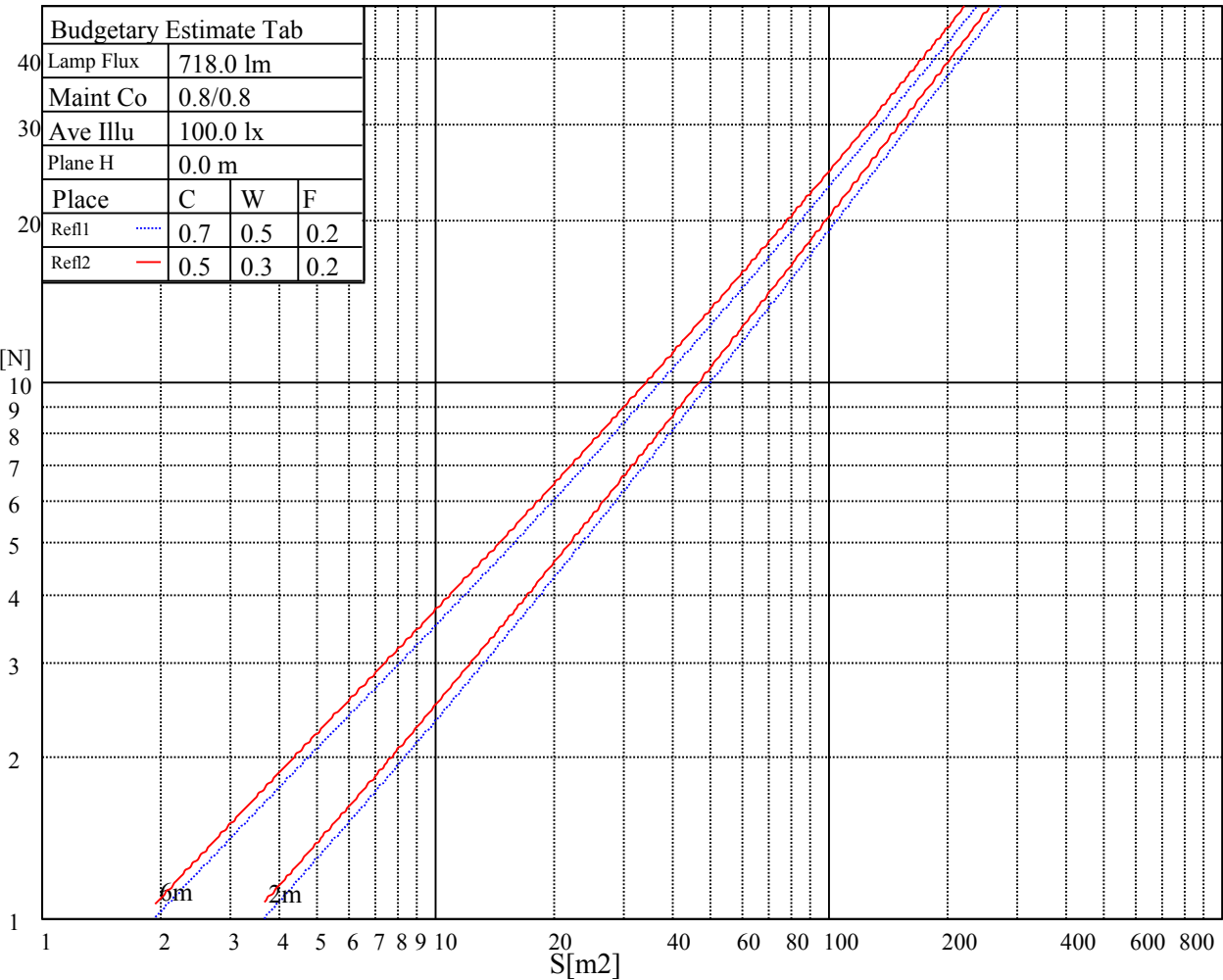
 $\gamma(^{\circ})$ 

C0 ———

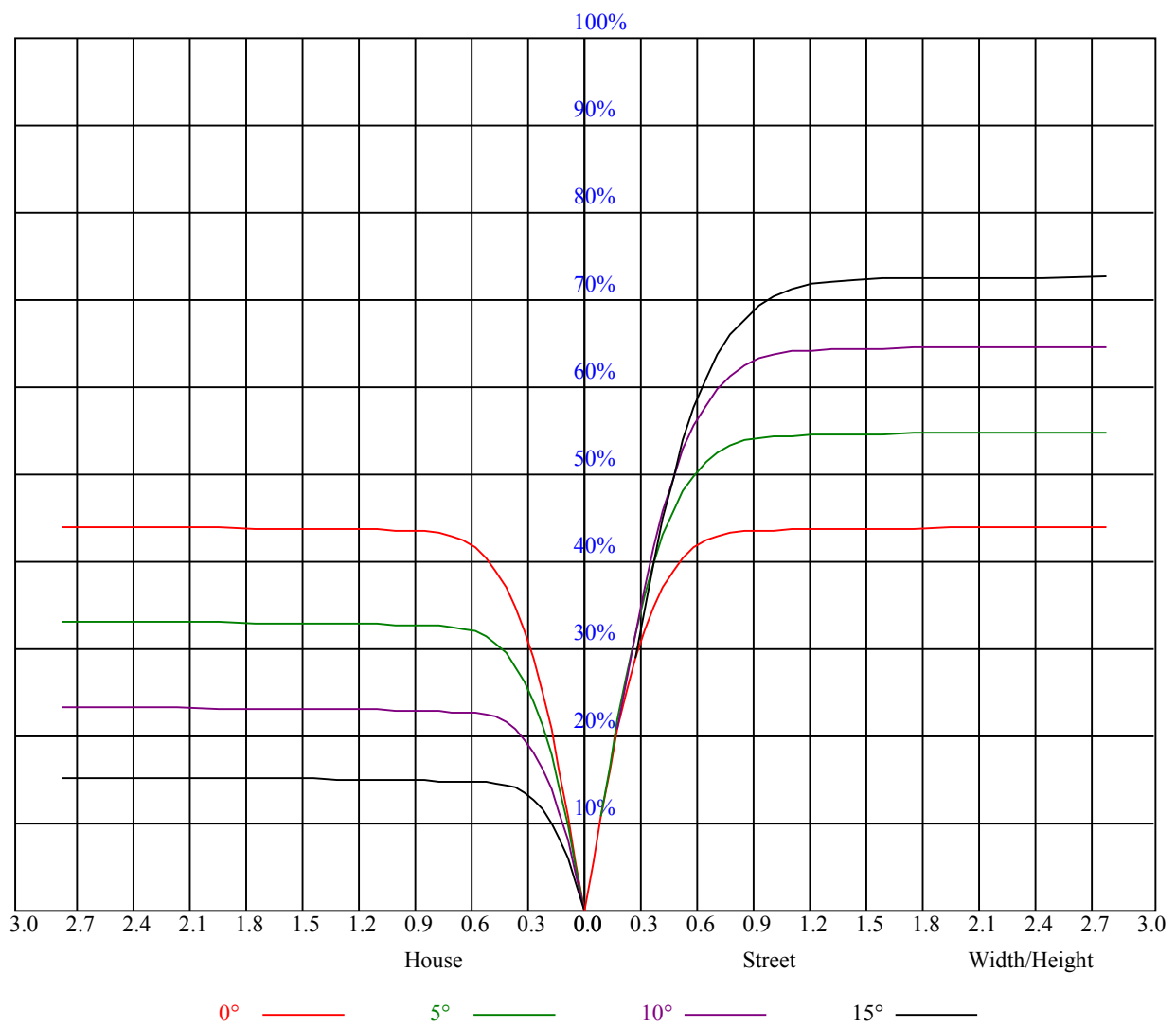
C45 ———

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	3.77	4.69	4.14	5.00	5.32	3.76	4.68	4.12	4.99	5.30
	3H	6.19	7.00	6.58	7.33	7.70	6.12	6.92	6.50	7.26	7.63
	4H	7.67	8.41	8.07	8.77	9.16	7.56	8.31	7.97	8.66	9.05
	6H	9.46	10.15	9.88	10.52	10.92	9.34	10.02	9.76	10.40	10.80
	8H	10.50	11.14	10.93	11.53	11.94	10.37	11.01	10.81	11.40	11.82
	12H	12.20	12.81	12.63	13.19	13.63	12.09	12.70	12.52	13.08	13.51
4H	2H	4.39	5.14	4.80	5.50	5.89	4.38	5.13	4.79	5.49	5.88
	3H	7.14	7.75	7.56	8.16	8.57	7.09	7.70	7.51	8.11	8.52
	4H	8.82	9.37	9.26	9.80	10.25	8.75	9.30	9.19	9.72	10.17
	6H	10.84	11.30	11.31	11.76	12.23	10.74	11.21	11.21	11.66	12.14
	8H	11.99	12.43	12.47	12.88	13.35	11.89	12.32	12.37	12.78	13.25
	12H	13.62	13.99	14.11	14.48	14.96	13.53	13.90	14.02	14.39	14.87
8H	4H	9.46	9.90	9.94	10.35	10.83	9.40	9.84	9.88	10.29	10.77
	6H	11.76	12.11	12.27	12.61	13.10	11.69	12.04	12.20	12.54	13.03
	8H	13.12	13.42	13.65	13.95	14.44	13.04	13.35	13.58	13.87	14.37
	12H	14.91	15.17	15.43	15.67	16.25	14.84	15.10	15.36	15.60	16.18
12H	4H	9.65	10.02	10.14	10.51	10.99	9.60	9.97	10.09	10.46	10.94
	6H	12.26	12.37	12.60	12.84	13.39	12.20	12.31	12.54	12.78	13.33
	8H	13.55	13.81	14.07	14.31	14.89	13.48	13.74	14.01	14.24	14.83
Variation with the observer position at spacings:											
S = 1.0H		5.8/-7.0					5.8/-7.0				
S = 1.5H		8.0/-5.3					8.0/-5.3				
S = 2.0H		9.4/-4.0					9.4/-4.0				
Standard tables:		BK3					BK3				
Uncorrected UGR		-3.3					-3.3				



RHOC	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	1.06	1.06	1.06	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	0.98	0.96	0.94	0.96	0.94	0.93	0.93	0.91	0.90	0.90	0.88	0.87	0.86	0.85	0.84	0.83
2	0.93	0.90	0.87	0.92	0.89	0.86	0.89	0.86	0.84	0.86	0.84	0.82	0.84	0.82	0.81	0.79
3	0.88	0.84	0.81	0.87	0.84	0.81	0.85	0.82	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.76
4	0.84	0.80	0.77	0.83	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.75	0.78	0.76	0.74	0.73
5	0.81	0.76	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.71	0.75	0.73	0.71	0.70
6	0.77	0.73	0.70	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
7	0.74	0.70	0.67	0.74	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.71	0.68	0.65	0.64
8	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.62
9	0.69	0.64	0.62	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.60
10	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.58



NATA 2-1682-M

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	1418.63	1359.00	1178.44	898.31	606.38	395.44	287.44	129.04	23.74		
45.0	1425.38	1354.50	1155.94	881.44	600.75	372.94	288.00	122.18	17.27		
90.0	1412.44	1317.94	1087.71	812.25	555.98	353.14	248.91	102.49	13.11		
135.0	1416.38	1354.50	1156.50	898.88	614.25	388.69	284.63	130.22	19.18		
180.0	1418.63	1342.13	1110.88	840.60	560.03	358.93	256.56	106.93	14.29		
225.0	1425.38	1351.69	1118.48	874.97	585.84	368.38	264.66	112.11	14.79		
270.0	1412.44	1366.88	1170.00	896.63	631.69	394.31	286.31	135.23	18.34		
315.0	1416.38	1329.75	1113.02	835.14	552.15	356.57	251.72	98.10	13.84		
360.0	1418.63	1359.00	1178.44	898.31	606.38	395.44	287.44	129.04	23.74		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	6.36	4.73	3.83	3.21	2.76	2.53	2.48	2.48	2.48		
45.0	6.19	4.84	3.94	3.21	2.81	2.59	2.48	2.48	2.48		
90.0	5.96	4.84	3.83	3.15	2.76	2.59	2.53	2.53	2.48		
135.0	6.36	4.78	3.83	3.21	2.81	2.59	2.48	2.48	2.48		
180.0	5.85	4.67	3.71	3.09	2.70	2.53	2.48	2.48	2.48		
225.0	5.46	4.44	3.60	3.04	2.76	2.53	2.48	2.48	2.48		
270.0	6.19	4.73	3.77	3.15	2.76	2.59	2.53	2.53	2.53		
315.0	5.68	4.56	3.71	3.09	2.76	2.53	2.48	2.48	2.42		
360.0	6.36	4.73	3.83	3.21	2.76	2.53	2.48	2.48	2.48		
C/γ(°)	90.0										
0.0	2.42										
45.0	2.42										
90.0	2.48										
135.0	2.48										
180.0	2.42										
225.0	2.48										
270.0	2.42										
315.0	2.48										
360.0	2.42										