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NATA

LumCAT: 1406-N	
Luminaire: 92.70.051.00	
Report No: NATA0100	Voltage(V): 36.0000
Test No: GC2019022206	Current(A): 0.1500
LampCAT: BRIDGELUX V4 HD	Power (W): 5.4000
Lamp flux(lm): 523.5	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 39	Width(mm): 39
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 455.90
Efficiency(%): 87.09%
Lumens(lm)/Power(W): 85.13
Central intensity(cd): 710.437
Maximum intensity(cd): 710.437
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=36.0
[C90/270]Total=36.0
Field angle(10%Imax): [C0/180]Total=87.1
[C90/270]Total=87.1
Maximum s/h(1/2): C0_180=0.58 C90_270=0.58
Maximum s/h(1/4): C0_180=0.63 C90_270=0.63
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 87.81%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 95.530%

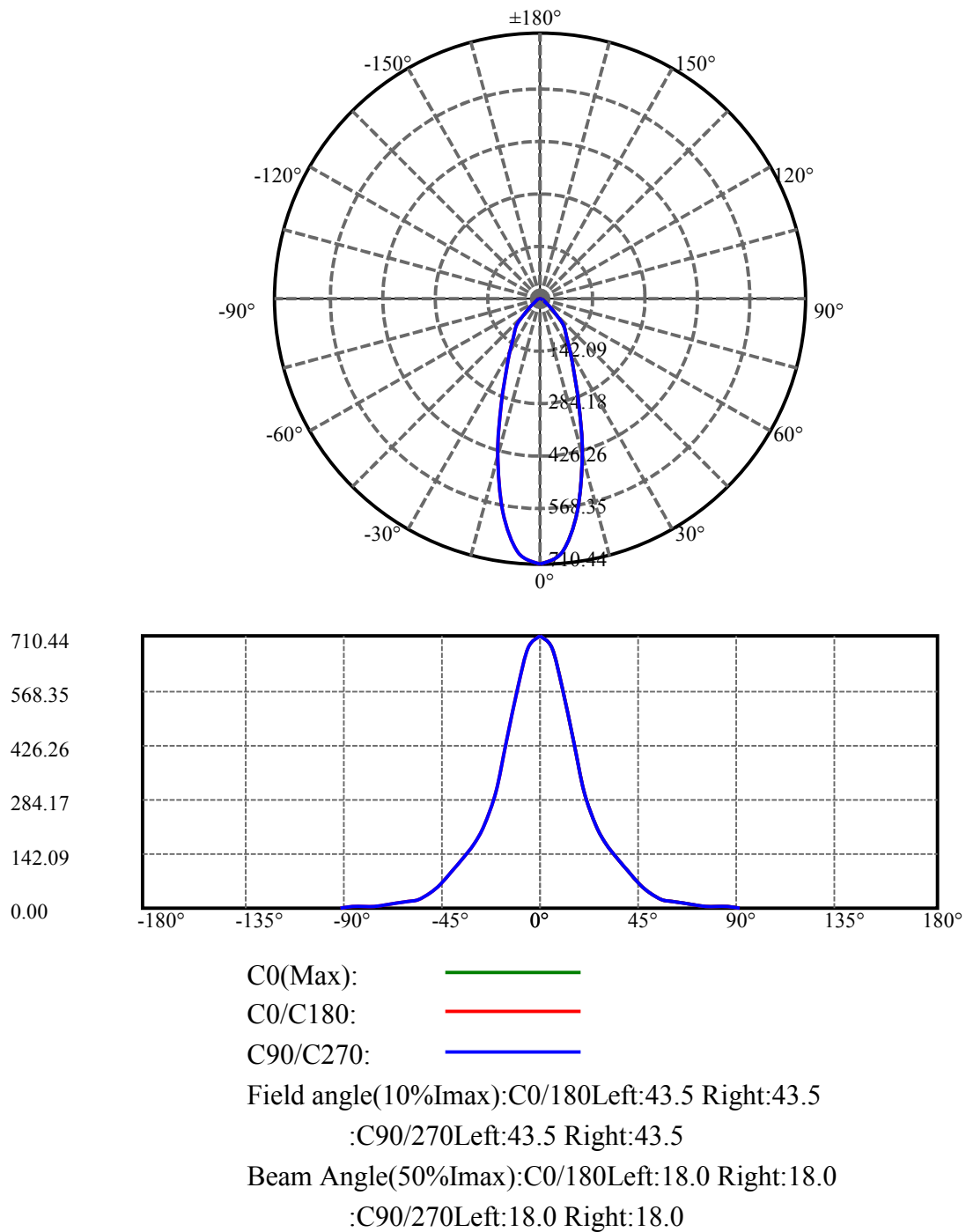
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	710.438	4.249	4.249	.812%	.932%
5.0	679.479	32.461	36.71	6.201%	8.052%
10.0	578.946	55.106	91.815	10.526%	20.139%
15.0	430.734	61.108	152.923	11.673%	33.543%
20.0	305.023	57.184	210.107	10.923%	46.086%
25.0	217.146	50.303	260.409	9.609%	57.119%
30.0	167.070	45.789	306.198	8.746%	67.163%
35.0	129.874	40.832	347.03	7.800%	76.119%
40.0	95.372	33.603	380.633	6.419%	83.490%
45.0	61.073	23.672	404.305	4.522%	88.682%
50.0	38.341	16.099	420.404	3.075%	92.213%
55.0	24.223	10.876	431.28	2.078%	94.599%
60.0	16.622	7.890	439.171	1.507%	96.330%
65.0	11.566	5.746	444.917	1.098%	97.590%
70.0	8.353	4.303	449.219	.822%	98.534%
75.0	5.639	2.986	452.205	.570%	99.189%
80.0	3.677	1.985	454.19	.379%	99.624%
85.0	2.292	1.252	455.442	.239%	99.899%
90.0	1.688	0.462	455.904	.088%	100.000%

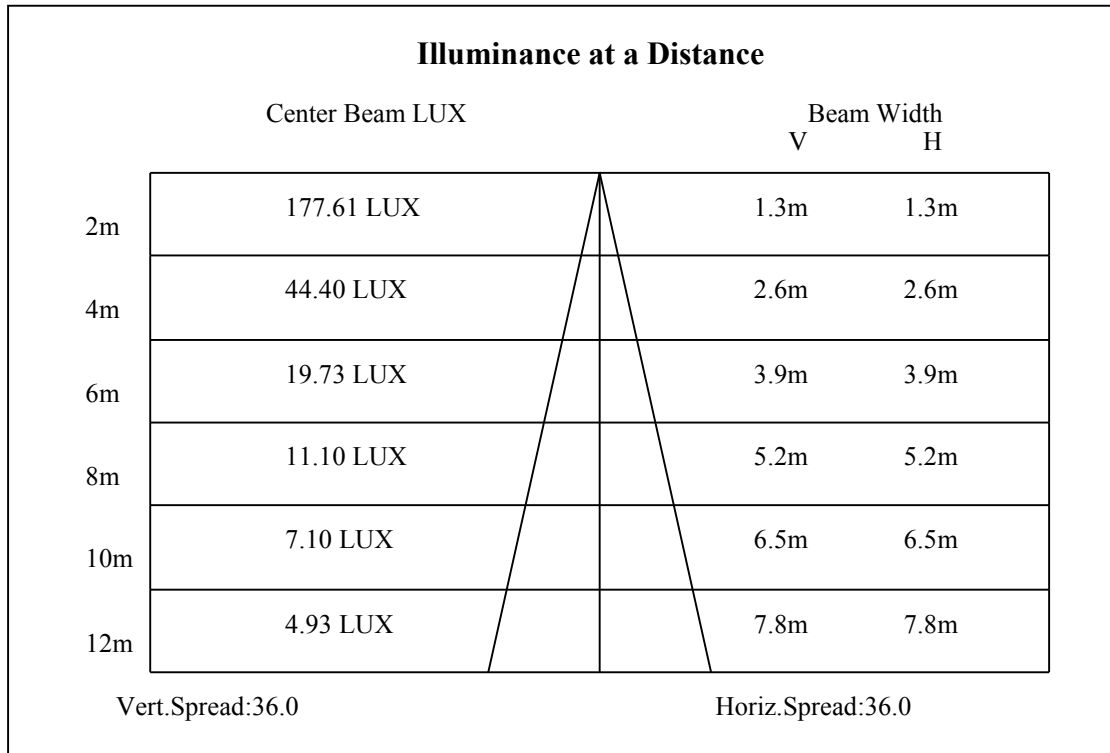
ZONAL LUMEN SUMMARY

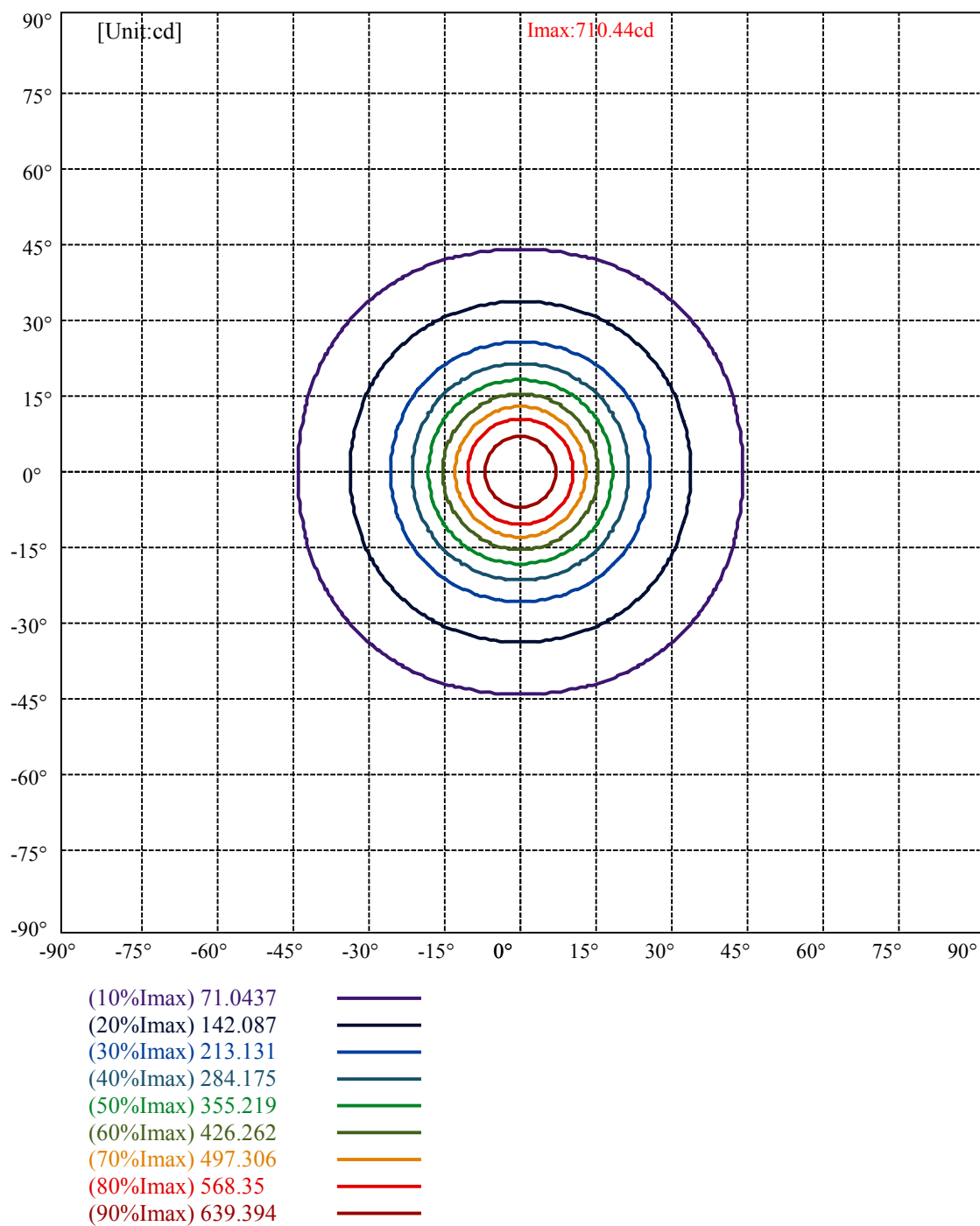
Zone	Lumens	%Lamp	%Fixt
0-30	306.20	58.49%	67.16%
0-40	380.63	72.71%	83.49%
0-60	439.17	83.89%	96.33%
0-90	455.44	87.00%	99.90%
0-120	455.44	87.00%	99.90%
0-180	455.90	87.09%	100.00%
60-90	24.16	4.62%	5.30%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-37.63	364.72	69.67%	80.00%

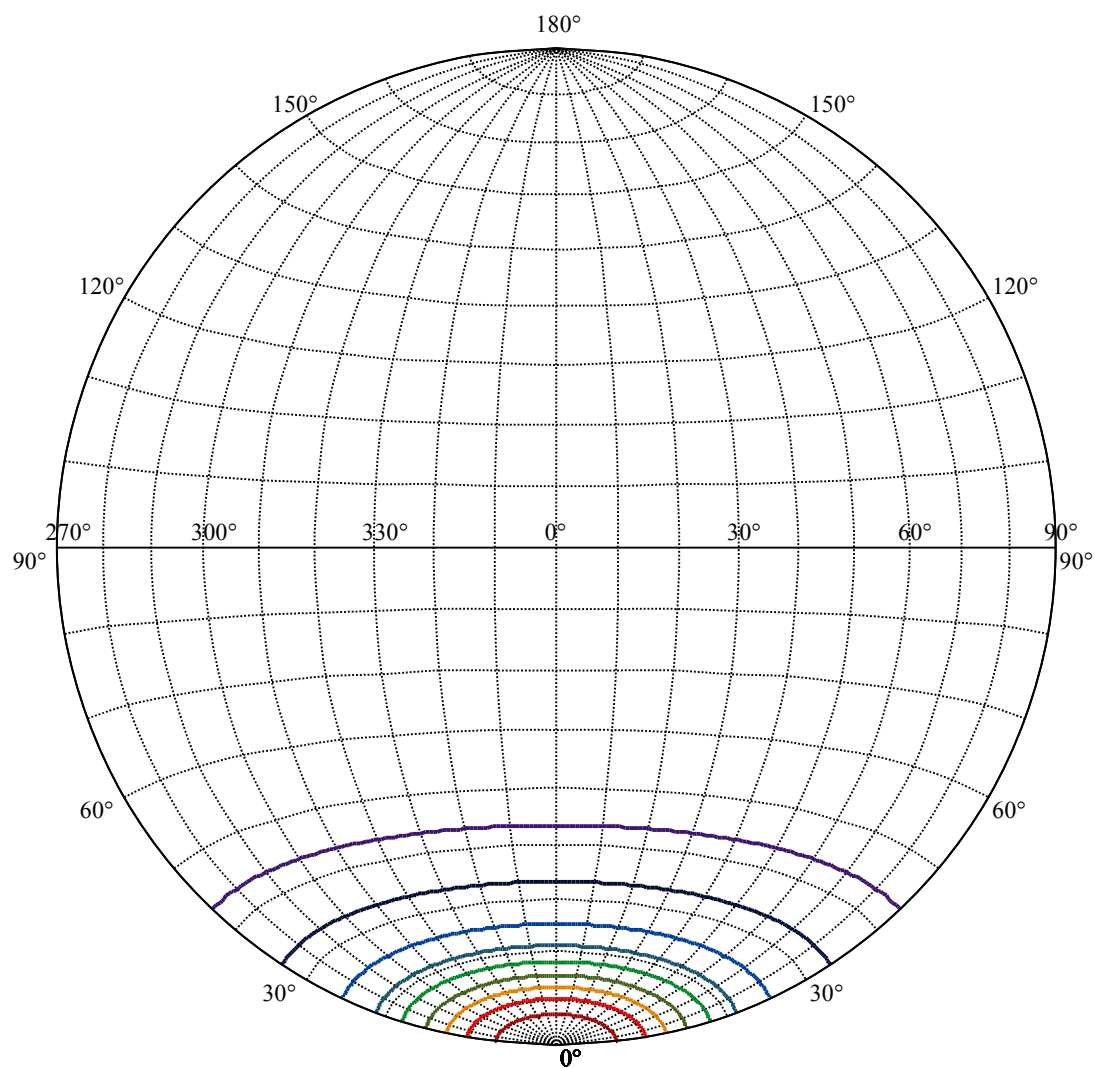
ZONAL LUMEN SUMMARY

0-10	91.82
10-20	118.29
20-30	96.09
30-40	74.44
40-50	39.77
50-60	18.77
60-70	10.05
70-80	4.97
80-90	1.25
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







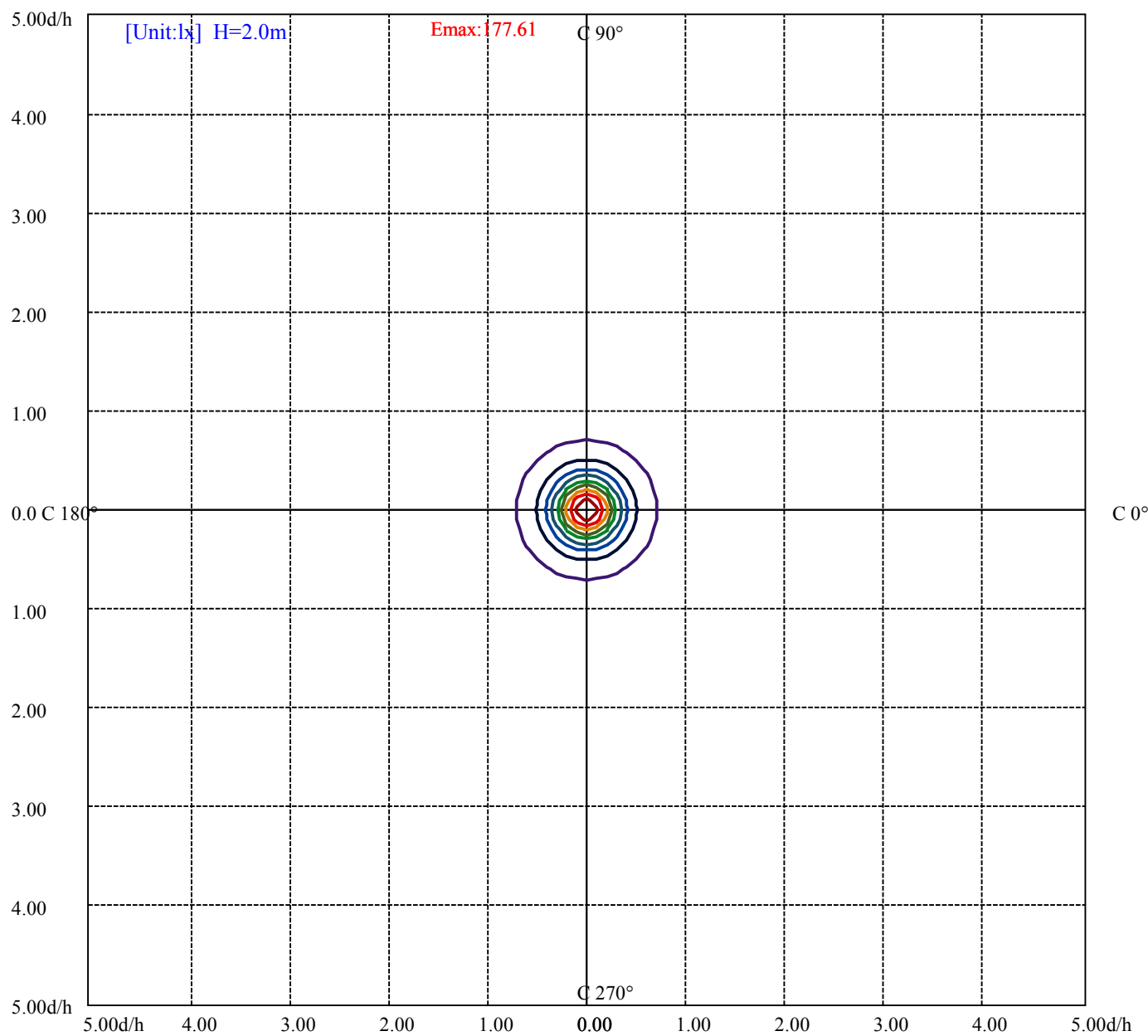


House

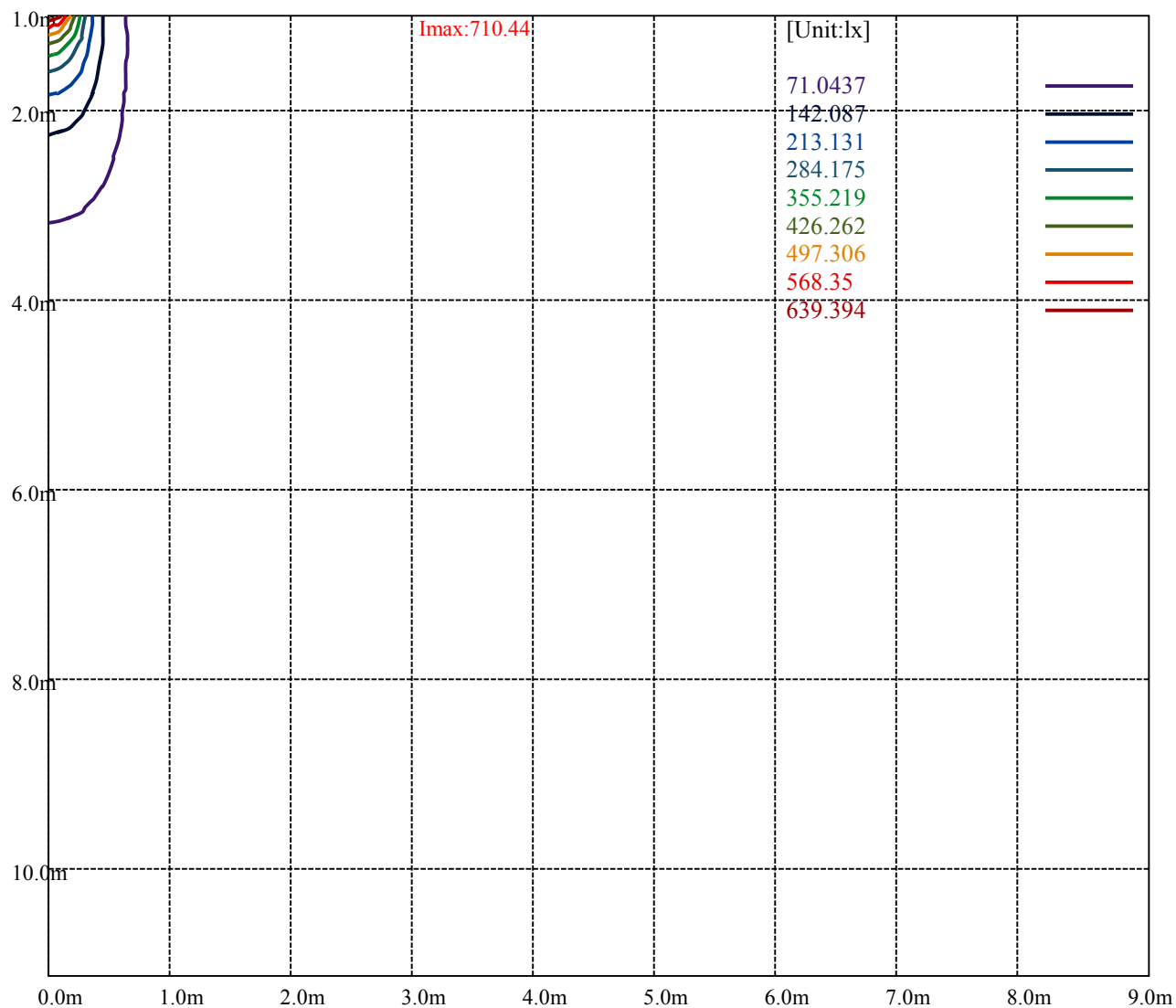
[Unit:cd]

Road

I_{max}:710.44(10%I_{max}) 71.0437(20%I_{max}) 142.087(30%I_{max}) 213.131(40%I_{max}) 284.175(50%I_{max}) 355.219(60%I_{max}) 426.262(70%I_{max}) 497.306(80%I_{max}) 568.35(90%I_{max}) 639.394



(10%E _{max}) 17.76093	—
(20%E _{max}) 35.52175	—
(30%E _{max}) 53.28275	—
(40%E _{max}) 71.04375	—
(50%E _{max}) 88.8045	—
(60%E _{max}) 106.5655	—
(70%E _{max}) 124.3265	—
(80%E _{max}) 142.0872	—
(90%E _{max}) 159.8483	—



Luminance Table

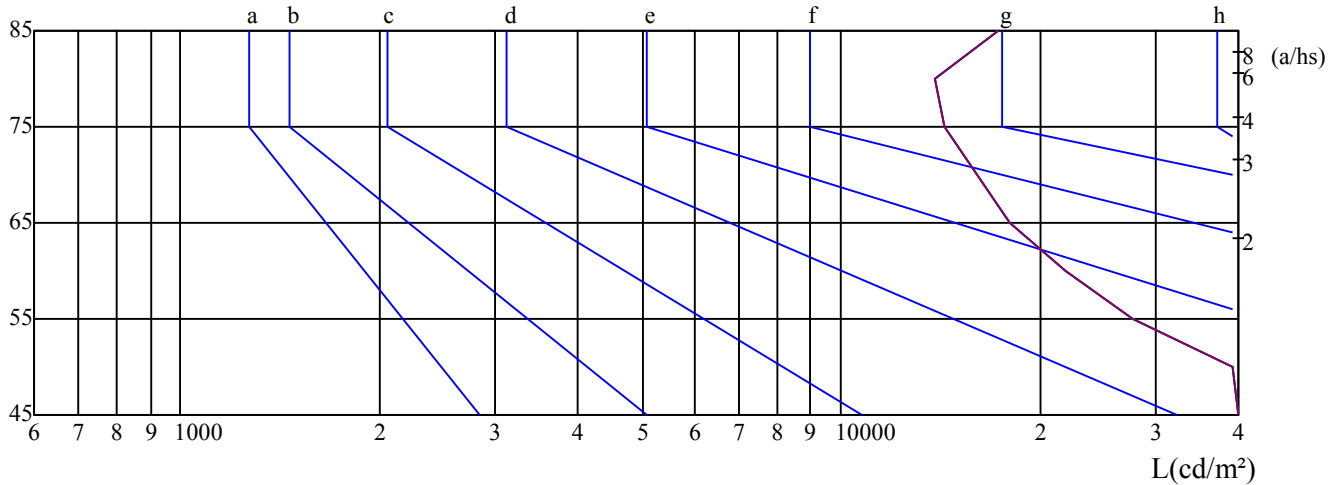
γ	45	50	55	60	65	70	75	80	85
C0	56786	39217	27765	21857	17994	16057	14325	13923	17291
C45	56786	39217	27765	21857	17994	16057	14325	13923	17291
C90	56786	39217	27765	21857	17994	16057	14325	13923	17291

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
17994	17994	17994	14325	14325	14325	17291	17291	17291

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

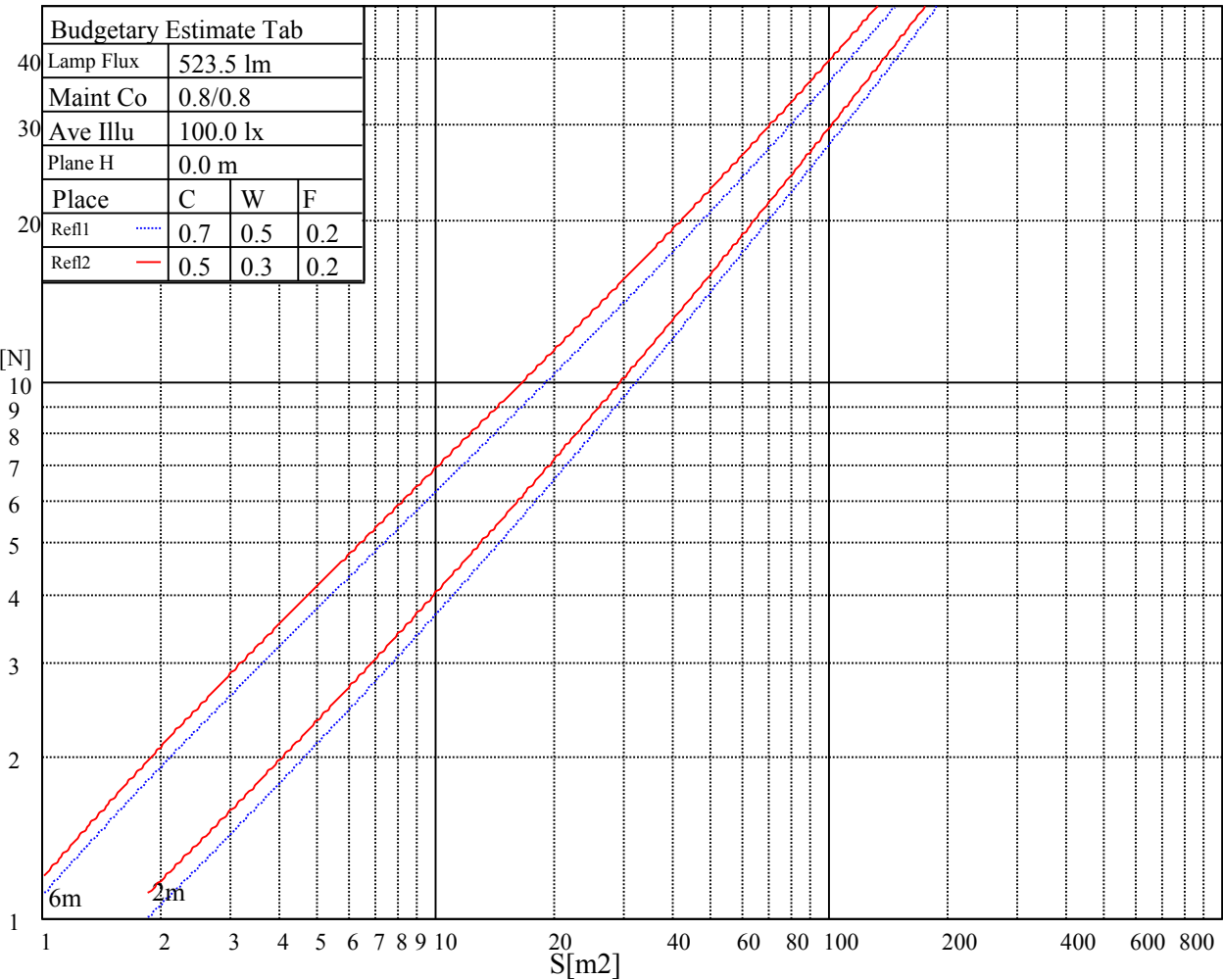
 $\gamma(^{\circ})$ 

C0 ———

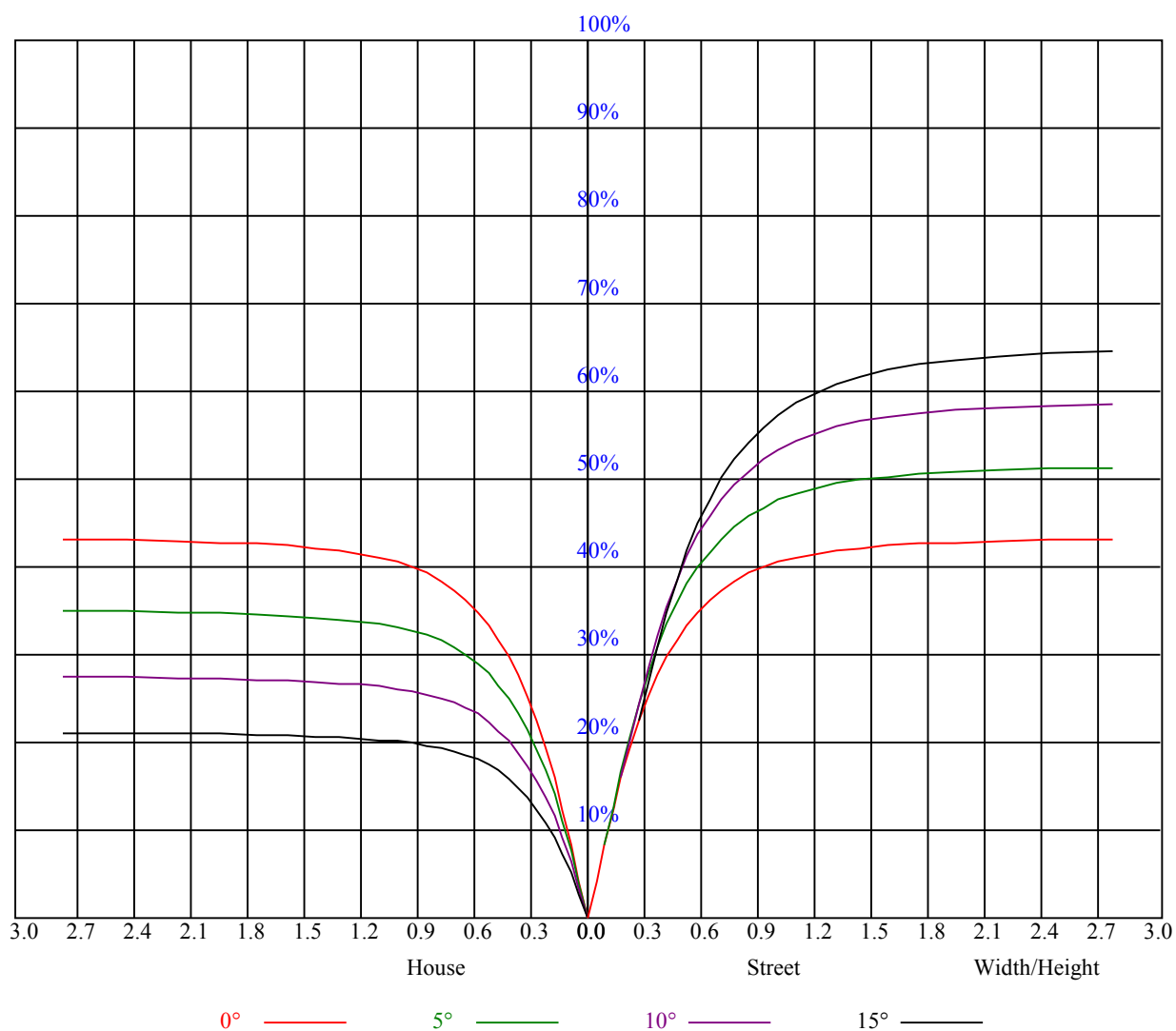
C45 ———

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	22.14	23.30	22.51	23.61	23.93	22.08	23.24	22.45	23.55	23.87
	3H	23.14	24.17	23.53	24.50	24.87	23.11	24.13	23.49	24.46	24.83
	4H	23.52	24.48	23.93	24.83	25.21	23.49	24.44	23.90	24.80	25.18
	6H	23.84	24.71	24.25	25.08	25.48	23.81	24.68	24.23	25.06	25.45
	8H	23.97	24.79	24.40	25.18	25.59	23.95	24.77	24.38	25.17	25.57
	12H	24.20	24.99	24.63	25.37	25.80	24.20	24.98	24.63	25.37	25.80
4H	2H	22.39	23.34	22.79	23.69	24.08	22.34	23.29	22.74	23.64	24.03
	3H	23.61	24.38	24.02	24.79	25.20	23.58	24.35	23.99	24.76	25.17
	4H	24.10	24.80	24.54	25.22	25.66	24.08	24.77	24.51	25.19	25.64
	6H	24.48	25.08	24.94	25.52	25.99	24.46	25.06	24.93	25.51	25.98
	8H	24.67	25.23	25.15	25.68	26.15	24.66	25.22	25.14	25.67	26.14
	12H	24.95	25.44	25.44	25.92	26.40	24.96	25.45	25.45	25.93	26.41
8H	4H	24.24	24.80	24.71	25.25	25.72	24.22	24.78	24.69	25.22	25.70
	6H	24.75	25.20	25.26	25.70	26.19	24.74	25.19	25.25	25.69	26.17
	8H	25.05	25.45	25.57	25.97	26.46	25.04	25.44	25.57	25.96	26.46
	12H	25.83	26.19	26.35	26.68	27.26	25.85	26.21	26.37	26.70	27.28
12H	4H	24.24	24.72	24.73	25.21	25.69	24.21	24.70	24.70	25.19	25.66
	6H	25.23	25.20	25.32	25.67	26.21	25.22	25.18	25.31	25.65	26.20
	8H	25.15	25.50	25.67	26.00	26.57	25.14	25.50	25.66	25.99	26.57
Variation with the observer position at spacings:											
S = 1.0H		1.1/-1.9					1.1/-1.9				
S = 1.5H		2.4/-2.5					2.4/-2.5				
S = 2.0H		4.3/-2.7					4.3/-2.7				
Standard tables:		BK2					BK2				
Uncorrected UGR		5.7					5.7				



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	1.05	1.05	1.05	1.02	1.02	1.02	0.98	0.98	0.98	0.93	0.93	0.93	0.90	0.90	0.90	0.88
1	0.96	0.93	0.91	0.94	0.91	0.89	0.90	0.88	0.87	0.87	0.85	0.84	0.84	0.83	0.82	0.80
2	0.89	0.85	0.81	0.87	0.84	0.81	0.84	0.81	0.79	0.82	0.79	0.77	0.79	0.77	0.75	0.74
3	0.83	0.78	0.74	0.81	0.77	0.73	0.79	0.75	0.72	0.77	0.74	0.71	0.75	0.72	0.70	0.69
4	0.77	0.72	0.68	0.76	0.71	0.68	0.74	0.70	0.67	0.72	0.69	0.66	0.71	0.68	0.65	0.64
5	0.72	0.67	0.63	0.72	0.67	0.63	0.70	0.66	0.62	0.68	0.65	0.62	0.67	0.64	0.61	0.60
6	0.68	0.63	0.59	0.67	0.62	0.59	0.66	0.62	0.58	0.65	0.61	0.58	0.64	0.60	0.57	0.56
7	0.64	0.59	0.55	0.64	0.59	0.55	0.63	0.58	0.55	0.62	0.58	0.55	0.61	0.57	0.54	0.53
8	0.61	0.56	0.52	0.61	0.56	0.52	0.60	0.55	0.52	0.59	0.55	0.52	0.58	0.54	0.51	0.50
9	0.58	0.53	0.49	0.58	0.53	0.49	0.57	0.52	0.49	0.56	0.52	0.49	0.55	0.52	0.49	0.48
10	0.55	0.50	0.47	0.55	0.50	0.47	0.54	0.50	0.47	0.54	0.49	0.47	0.53	0.49	0.46	0.45



NATA 1406-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	709.09	664.43	556.59	421.09	291.21	213.13	166.50	129.26	91.80		
45.0	714.49	679.28	578.81	429.36	314.16	221.46	170.83	132.13	95.51		
90.0	712.63	680.01	579.88	422.94	307.80	220.16	169.48	131.18	95.18		
135.0	705.54	698.18	623.70	480.26	342.06	234.79	176.06	136.18	102.60		
180.0	709.09	690.98	600.64	450.39	317.93	225.00	173.59	133.48	104.34		
225.0	714.49	686.76	586.29	439.26	306.11	217.41	167.85	132.53	99.11		
270.0	712.63	681.36	576.51	429.02	296.61	211.39	164.36	131.57	95.68		
315.0	705.54	654.86	529.14	373.56	264.32	193.84	147.88	112.67	78.75		
360.0	709.09	664.43	556.59	421.09	291.21	213.13	166.50	129.26	91.80		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	57.38	35.55	21.83	14.91	10.74	7.59	5.18	3.32	2.14		
45.0	59.85	37.01	23.68	16.26	11.31	8.38	5.63	3.71	2.36		
90.0	60.41	38.76	24.53	16.82	11.31	8.33	5.63	3.60	2.25		
135.0	68.06	45.06	27.06	18.45	12.66	9.06	6.19	3.99	2.42		
180.0	68.12	41.91	26.66	18.39	12.77	9.17	6.19	4.11	2.53		
225.0	64.24	40.95	25.65	17.49	12.38	8.78	5.91	3.88	2.48		
270.0	61.93	38.31	24.69	16.93	11.70	8.49	5.74	3.77	2.25		
315.0	48.60	29.19	19.69	13.73	9.68	7.03	4.67	3.04	1.91		
360.0	57.38	35.55	21.83	14.91	10.74	7.59	5.18	3.32	2.14		
C/γ(°)	90.0										
0.0	1.63										
45.0	1.69										
90.0	1.63										
135.0	1.69										
180.0	1.69										
225.0	1.74										
270.0	1.74										
315.0	1.69										
360.0	1.63										