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Nata

LumCAT: 1407-N
Luminaire: 92.70.043.00
Report No: NATA0100
Test No: GC2018092604
LampCAT: CITIZEN CLU7A2-1201C9
Lamp flux(lm): 762.0
Number of Lamps: 1
Length(mm): 39
Phm Type: C

Voltage(V): 37.3000
Current(A): 0.2100
Power (W): 7.8330
PF: 0.0000
Ballast type: DC
Width(mm): 39
Height(mm): 0

Photometric Results

Lumens(lm): 643.95
Efficiency(%): 84.51%
Lumens(lm)/Power(W): 82.75
Central intensity(cd): 808.749
Maximum intensity(cd): 808.749
Angle of maximum intensity: $C=0.0$ $\gamma=0.0$
Beam Angle(50%Imax): [C0/180]Total=43.1
[C90/270]Total=43.1
Field angle(10%Imax): [C0/180]Total=92.8
[C90/270]Total=92.8
Maximum s/h(1/2): C0_180=0.67 C90_270=0.67
Maximum s/h(1/4): C0_180=0.76 C90_270=0.76
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 85.06%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 95.378%

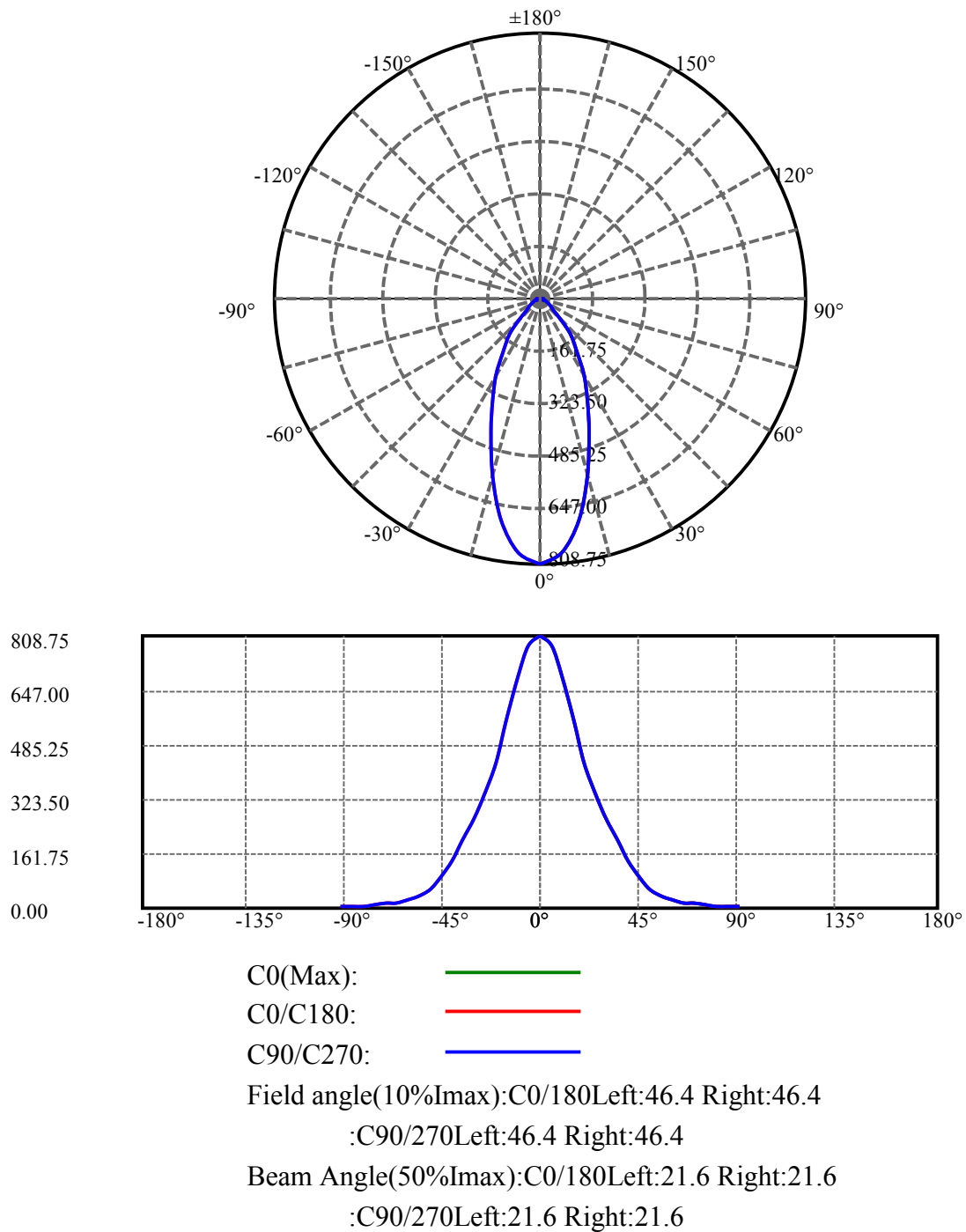
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	808.748	4.836	4.836	.635%	.751%
5.0	777.537	37.146	41.982	4.875%	6.519%
10.0	687.698	65.457	107.439	8.590%	16.684%
15.0	558.429	79.223	186.663	10.397%	28.987%
20.0	434.123	81.387	268.05	10.681%	41.626%
25.0	338.611	78.440	346.49	10.294%	53.807%
30.0	266.105	72.931	419.421	9.571%	65.132%
35.0	199.280	62.653	482.074	8.222%	74.862%
40.0	141.736	49.939	532.013	6.554%	82.617%
45.0	90.710	35.159	567.171	4.614%	88.077%
50.0	55.941	23.489	590.66	3.083%	91.725%
55.0	35.156	15.785	606.446	2.072%	94.176%
60.0	24.799	11.772	618.218	1.545%	96.004%
65.0	17.487	8.687	626.905	1.140%	97.353%
70.0	12.572	6.476	633.381	.850%	98.359%
75.0	8.761	4.639	638.019	.609%	99.079%
80.0	5.857	3.162	641.181	.415%	99.570%
85.0	3.748	2.046	643.227	.269%	99.888%
90.0	2.637	0.723	643.95	.095%	100.000%

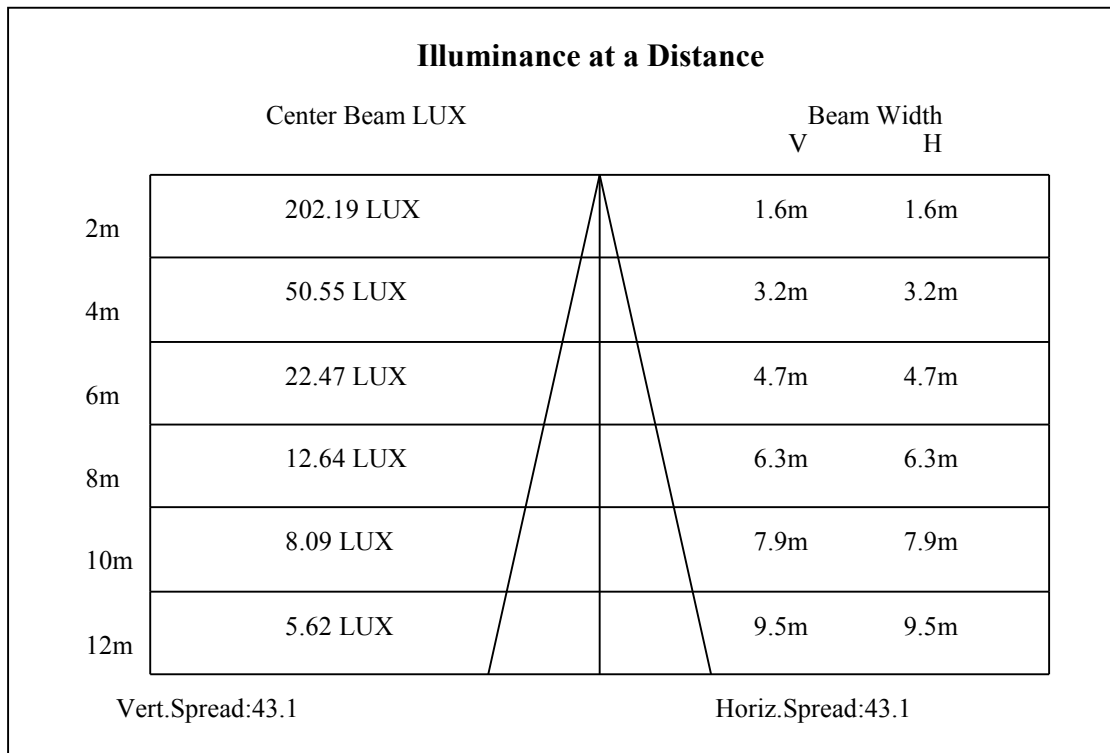
ZONAL LUMEN SUMMARY

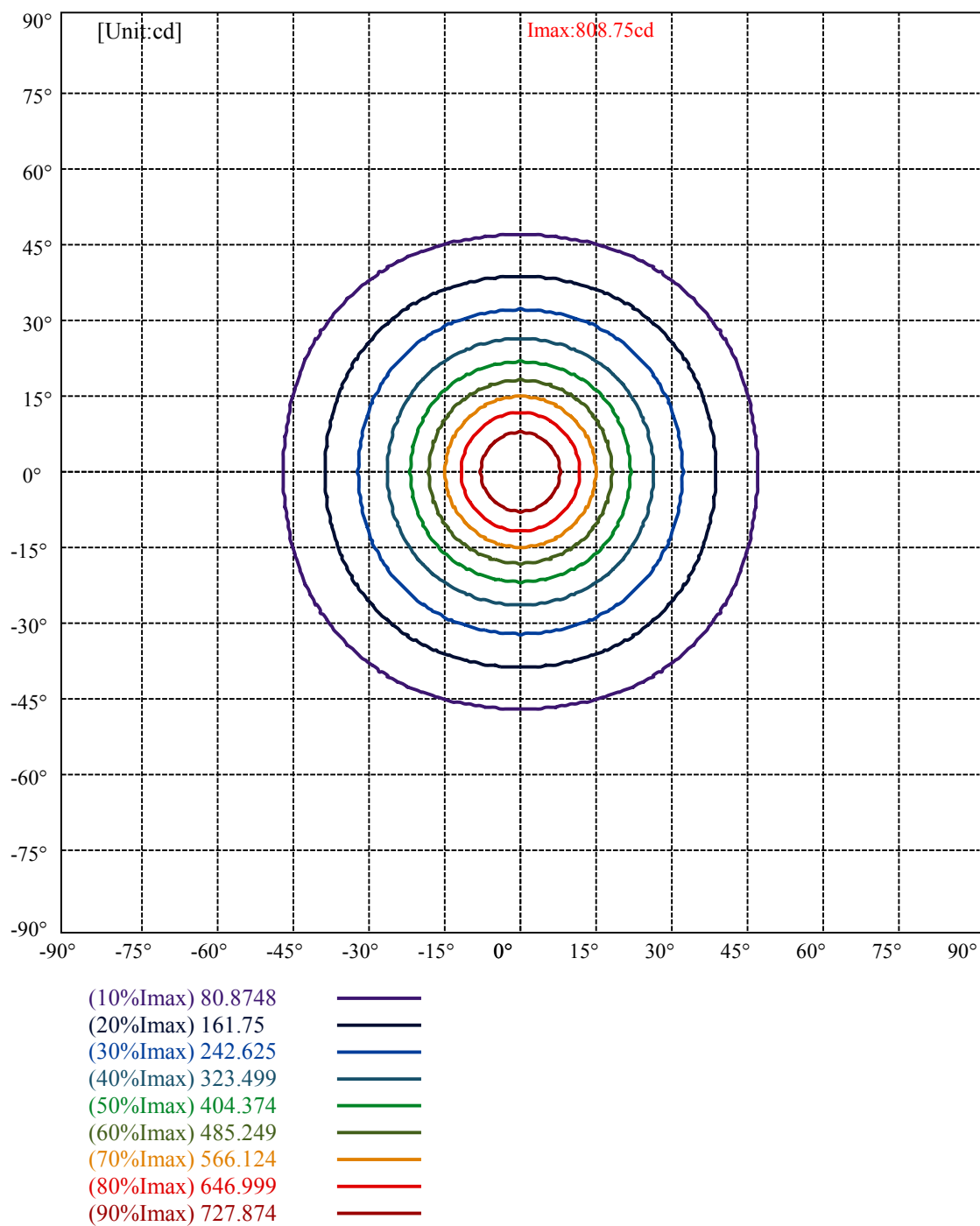
Zone	Lumens	%Lamp	%Fixt
0-30	419.42	55.04%	65.13%
0-40	532.01	69.82%	82.62%
0-60	618.22	81.13%	96.00%
0-90	643.23	84.41%	99.89%
0-120	643.23	84.41%	99.89%
0-180	643.95	84.51%	100.00%
60-90	36.78	4.83%	5.71%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-38.31	515.16	67.61%	80.00%

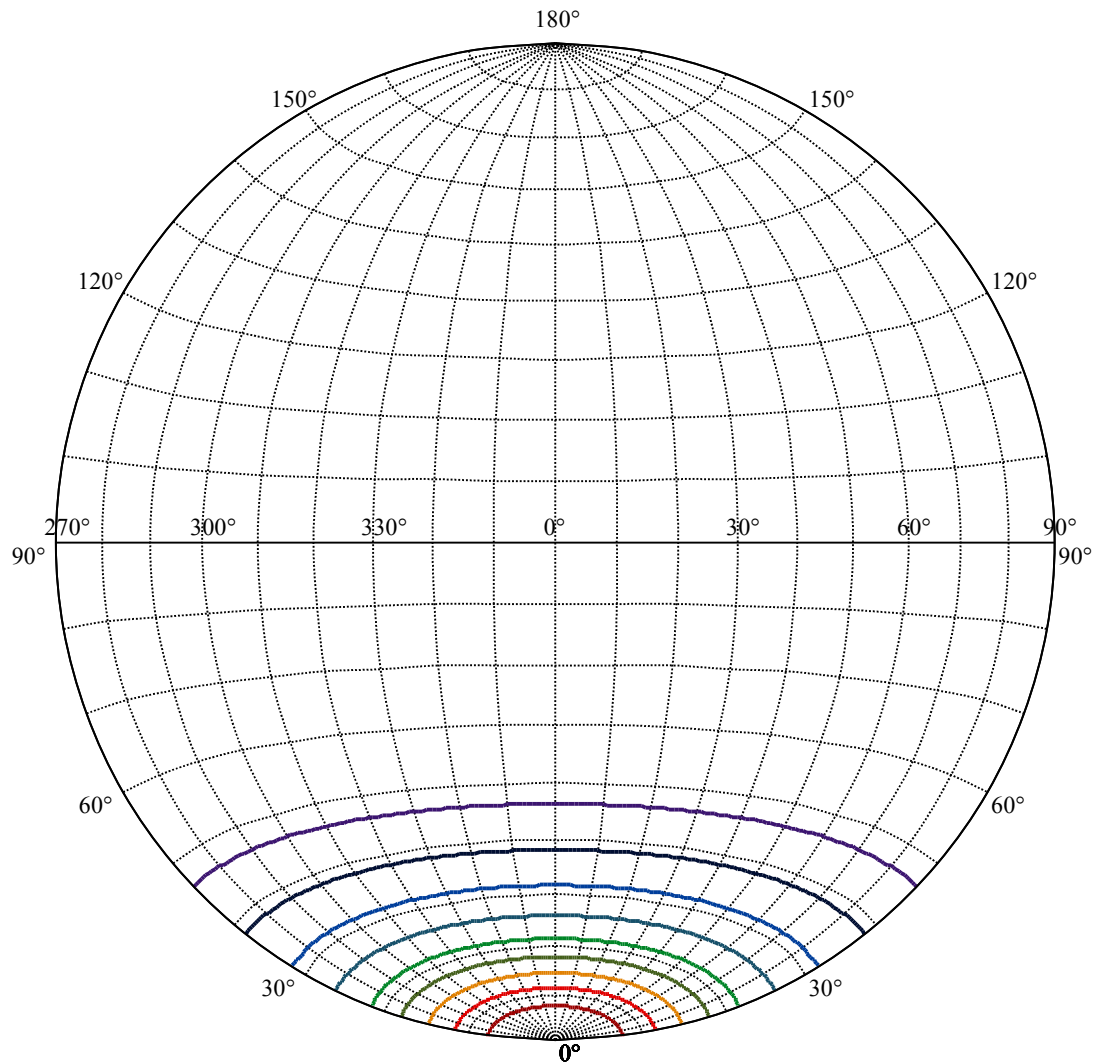
ZONAL LUMEN SUMMARY

0-10	107.44
10-20	160.61
20-30	151.37
30-40	112.59
40-50	58.65
50-60	27.56
60-70	15.16
70-80	7.80
80-90	2.05
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:808.75

(10%Imax) 80.8748

(20%Imax) 161.75

(30%Imax) 242.625

(40%Imax) 323.499

(50%Imax) 404.374

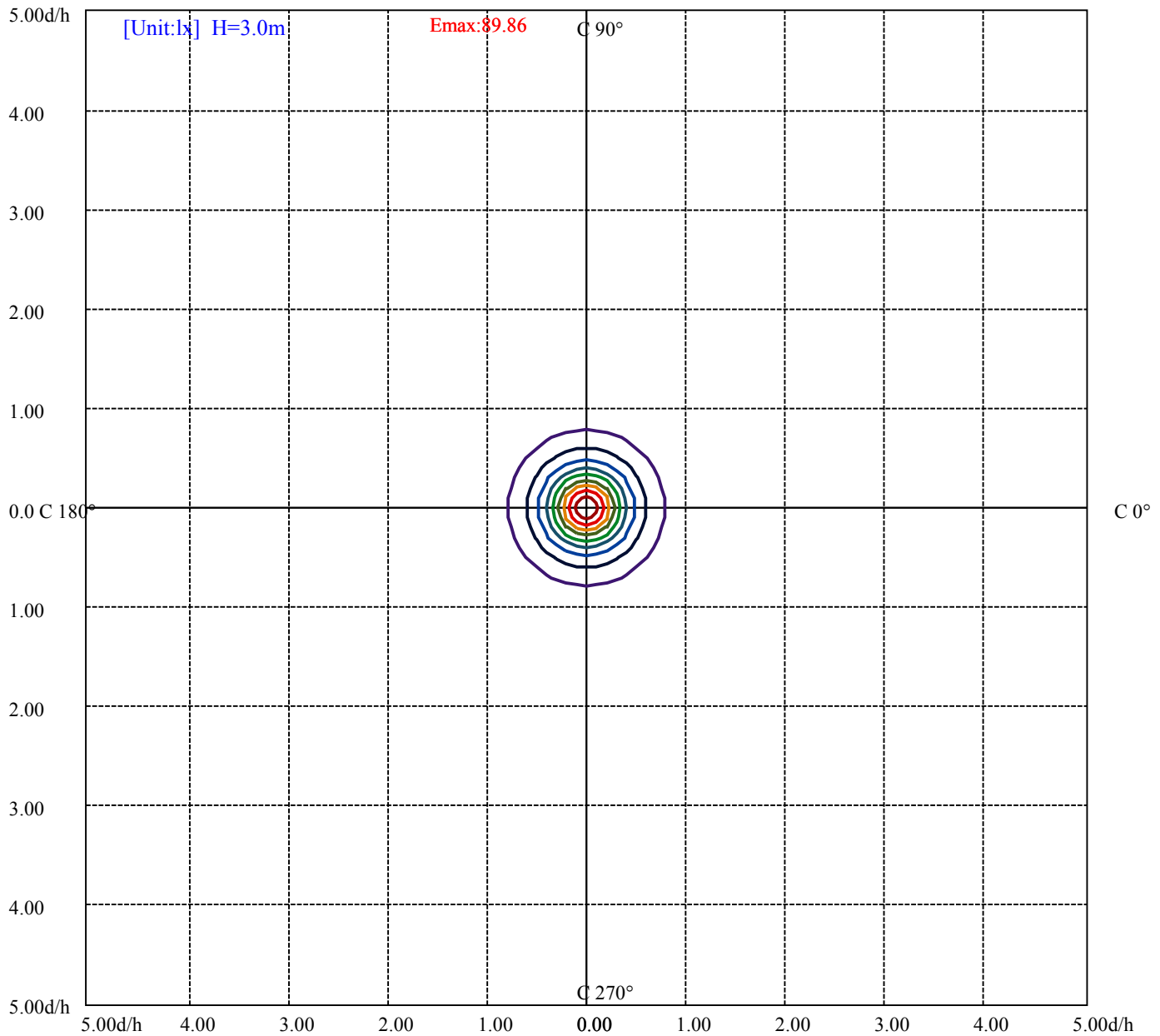
(60%Imax) 485.249

(70%Imax) 566.124

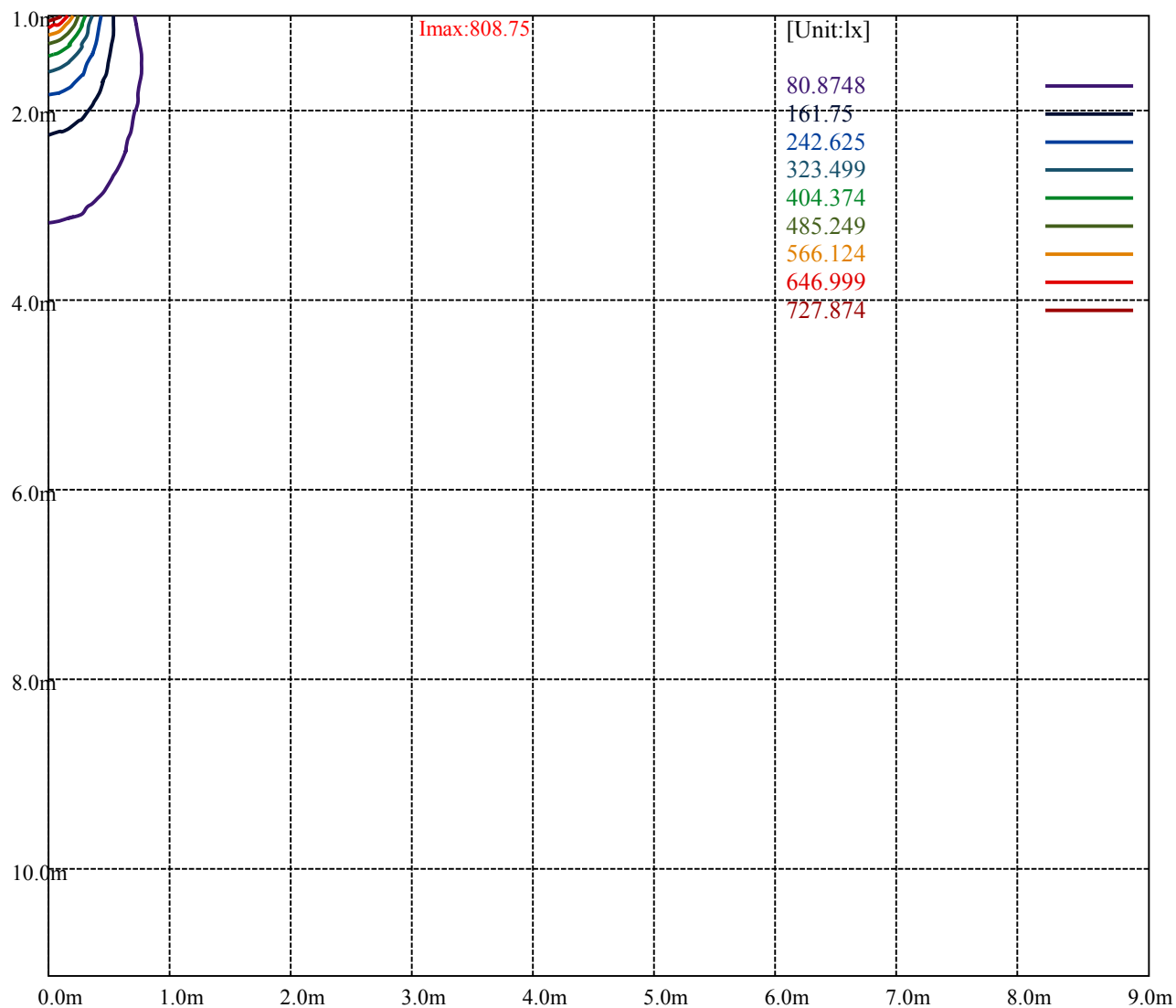
(80%Imax) 646.999

(90%Imax) 727.874





(10%Emax)	8.986089	—
(20%Emax)	17.97222	—
(30%Emax)	26.95822	—
(40%Emax)	35.94433	—
(50%Emax)	44.93044	—
(60%Emax)	53.91655	—
(70%Emax)	62.90255	—
(80%Emax)	71.88866	—
(90%Emax)	80.87478	—



Luminance Table

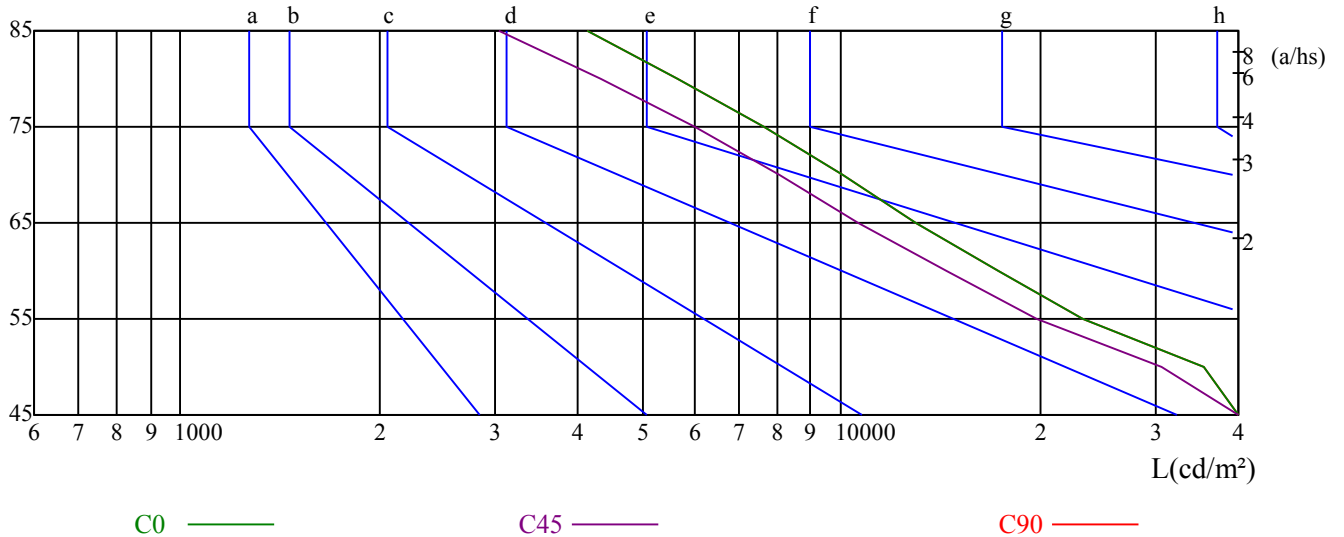
γ	45	50	55	60	65	70	75	80	85
C0	55751	35513	23262	17270	12956	10032	7638	5674	4120
C45	48887	30691	19795	14453	10646	8076	6004	4337	3043
C90	55751	35513	23262	17270	12956	10032	7638	5674	4120

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
27204	27204	27204	22255	22255	22255	28271	28271	28271

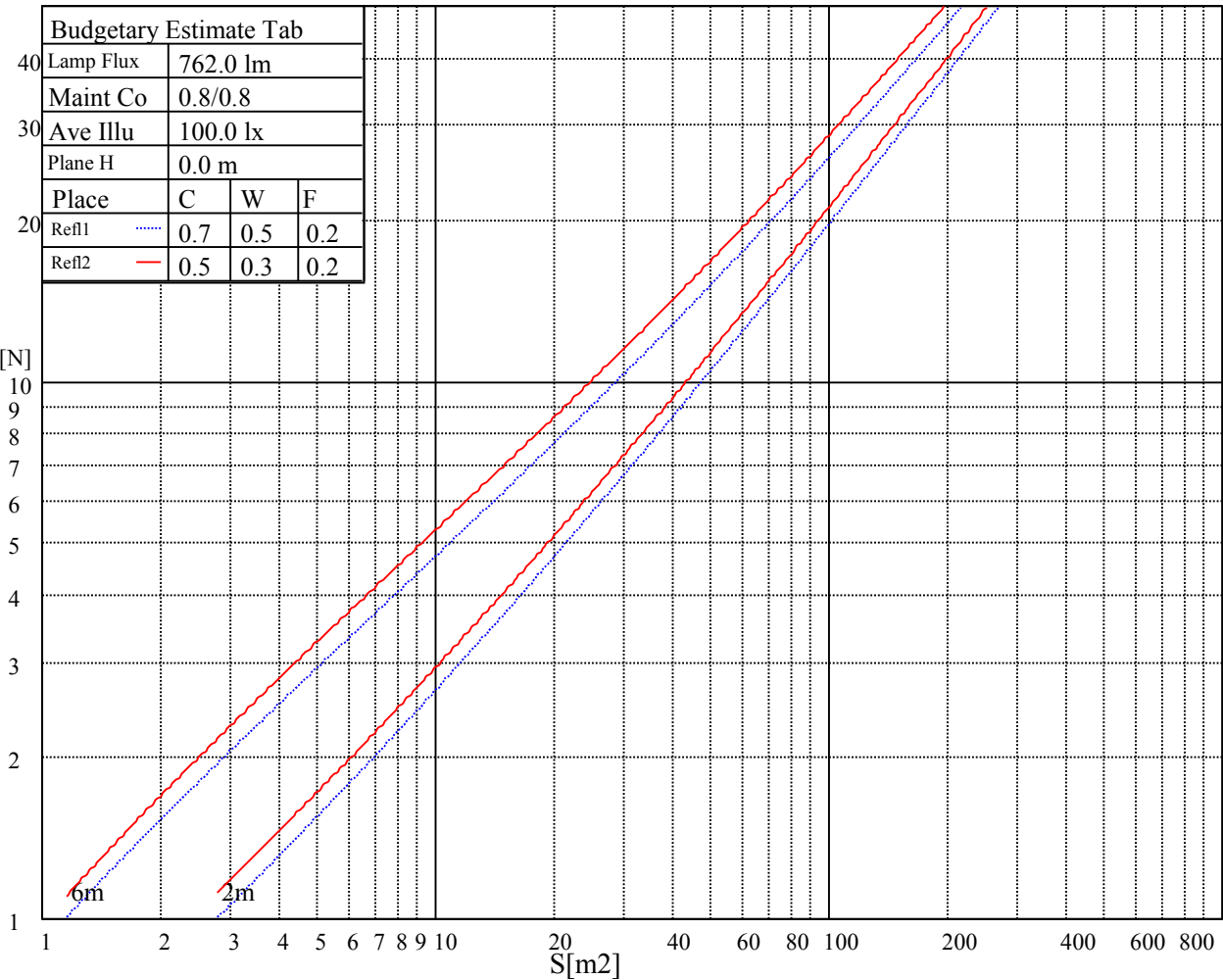
Glare Table

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

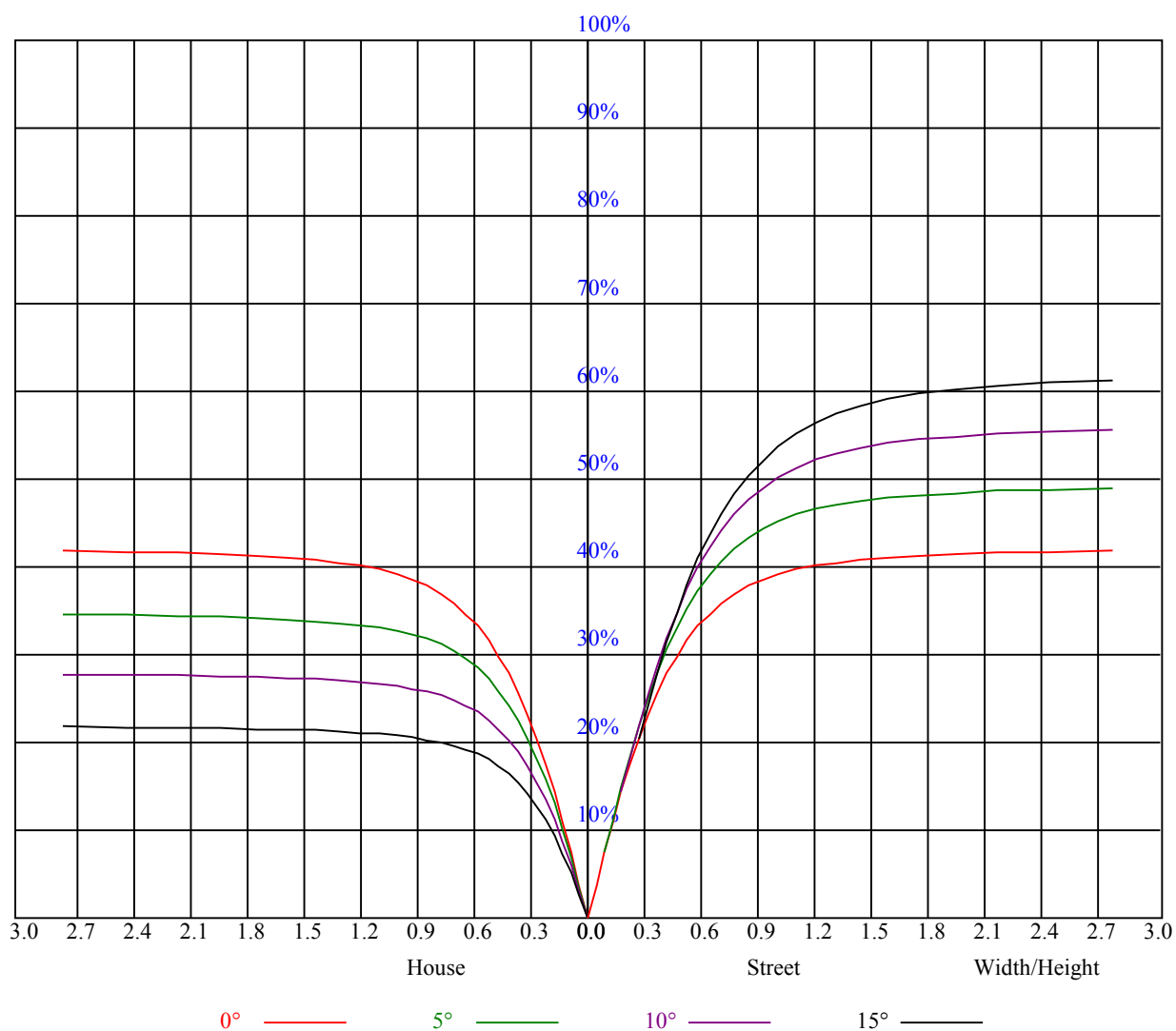
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

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	20.61	21.78	20.97	22.09	22.41	20.66	21.83	21.02	22.14	22.46
	3H	21.29	22.32	21.67	22.66	23.02	21.33	22.37	21.71	22.70	23.06
	4H	21.52	22.48	21.92	22.83	23.22	21.55	22.52	21.96	22.87	23.25
	6H	21.67	22.55	22.08	22.92	23.32	21.70	22.58	22.12	22.96	23.35
	8H	21.71	22.54	22.14	22.94	23.34	21.74	22.58	22.18	22.97	23.38
	12H	21.78	22.58	22.22	22.96	23.39	21.82	22.61	22.25	23.00	23.43
4H	2H	20.71	21.68	21.12	22.03	22.41	20.76	21.72	21.16	22.07	22.46
	3H	21.55	22.34	21.97	22.75	23.15	21.59	22.38	22.00	22.78	23.19
	4H	21.86	22.57	22.30	22.99	23.43	21.89	22.59	22.32	23.02	23.46
	6H	22.04	22.65	22.51	23.09	23.56	22.07	22.67	22.53	23.12	23.59
	8H	22.11	22.68	22.58	23.13	23.60	22.14	22.71	22.61	23.15	23.63
	12H	22.21	22.71	22.70	23.19	23.67	22.24	22.73	22.73	23.22	23.70
8H	4H	21.89	22.45	22.36	22.90	23.37	21.91	22.48	22.39	22.93	23.40
	6H	22.14	22.59	22.64	23.09	23.58	22.16	22.62	22.67	23.12	23.60
	8H	22.26	22.67	22.78	23.19	23.68	22.28	22.69	22.81	23.21	23.71
	12H	22.56	22.92	23.08	23.42	23.99	22.58	22.94	23.10	23.44	24.02
12H	4H	21.86	22.35	22.35	22.84	23.32	21.88	22.38	22.37	22.87	23.34
	6H	22.58	22.54	22.66	23.01	23.55	22.61	22.56	22.68	23.03	23.58
	8H	22.28	22.64	22.80	23.14	23.71	22.31	22.67	22.83	23.16	23.74
Variation with the observer position at spacings:											
S = 1.0H		1.5/-2.3					1.5/-2.3				
S = 1.5H		3.0/-3.0					3.0/-3.0				
S = 2.0H		5.1/-3.3					5.1/-3.3				
Standard tables:		BK2					BK2				
Uncorrected UGR		4.6					4.6				



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	1.01	1.01	1.01	0.99	0.99	0.99	0.95	0.95	0.95	0.90	0.90	0.90	0.87	0.87	0.87	0.85
1	0.93	0.90	0.88	0.91	0.89	0.86	0.87	0.85	0.84	0.84	0.83	0.81	0.81	0.80	0.79	0.77
2	0.86	0.82	0.78	0.84	0.81	0.78	0.81	0.78	0.76	0.79	0.76	0.74	0.76	0.74	0.73	0.71
3	0.79	0.75	0.71	0.78	0.74	0.70	0.76	0.72	0.69	0.74	0.71	0.68	0.72	0.69	0.67	0.66
4	0.74	0.69	0.65	0.73	0.68	0.65	0.71	0.67	0.64	0.69	0.66	0.63	0.68	0.65	0.62	0.61
5	0.69	0.64	0.60	0.68	0.63	0.60	0.67	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.58	0.57
6	0.65	0.59	0.56	0.64	0.59	0.55	0.63	0.58	0.55	0.62	0.58	0.55	0.60	0.57	0.54	0.53
7	0.61	0.56	0.52	0.60	0.55	0.52	0.59	0.55	0.52	0.58	0.54	0.51	0.57	0.54	0.51	0.50
8	0.58	0.52	0.49	0.57	0.52	0.49	0.56	0.52	0.48	0.55	0.51	0.48	0.54	0.51	0.48	0.47
9	0.55	0.49	0.46	0.54	0.49	0.46	0.53	0.49	0.46	0.53	0.49	0.46	0.52	0.48	0.45	0.44
10	0.52	0.47	0.43	0.52	0.47	0.43	0.51	0.46	0.43	0.50	0.46	0.43	0.50	0.46	0.43	0.42



Nata 1407-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	809.10	784.74	695.64	570.83	440.89	343.63	265.89	198.45	138.38		
45.0	809.33	769.33	672.98	548.44	426.83	341.89	263.59	194.51	135.51		
90.0	806.51	745.59	633.94	499.50	385.54	307.29	237.77	172.35	119.19		
135.0	810.06	767.87	672.53	541.58	414.39	321.24	254.25	191.25	136.29		
180.0	809.10	772.71	685.80	554.74	439.20	344.53	273.09	205.99	149.57		
225.0	809.33	786.94	706.84	568.74	445.44	345.26	278.16	208.86	151.59		
270.0	806.51	805.16	734.51	623.36	482.57	361.97	288.68	221.34	155.64		
315.0	810.06	787.95	699.36	560.25	438.13	343.07	267.41	201.49	147.71		
360.0	809.10	784.74	695.64	570.83	440.89	343.63	265.89	198.45	138.38		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	88.43	53.89	33.47	23.51	16.59	12.04	8.44	5.63	3.54		
45.0	84.94	52.14	32.68	23.29	16.43	11.81	8.44	5.51	3.60		
90.0	72.28	45.79	30.09	21.99	15.69	11.14	7.88	4.89	3.38		
135.0	87.69	54.34	34.76	24.86	17.49	12.54	8.55	5.68	3.49		
180.0	95.74	58.39	37.01	26.27	18.28	13.11	9.00	6.13	3.94		
225.0	100.01	62.04	38.76	27.00	18.84	13.50	9.23	6.58	4.28		
270.0	103.67	64.69	39.71	27.06	19.29	13.95	9.79	6.75	4.11		
315.0	92.93	56.25	34.76	24.41	17.27	12.49	8.78	5.68	3.66		
360.0	88.43	53.89	33.47	23.51	16.59	12.04	8.44	5.63	3.54		
C/γ(°)	90.0										
0.0	2.53										
45.0	2.53										
90.0	2.59										
135.0	2.59										
180.0	2.70										
225.0	2.81										
270.0	2.76										
315.0	2.59										
360.0	2.53										