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NATA

LumCAT: 1406-N	
Luminaire: 92.70.046.00	
Report No: NATA0100	Voltage(V): 27.1000
Test No: GC2019021906	Current(A): 0.4000
LampCAT: BRIDGELUX V10	Power (W): 10.8400
Lamp flux(lm): 1132.0	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): 970.43
Efficiency(%): 85.73%
Lumens(lm)/Power(W): 90.20
Central intensity(cd): 1375.312
Maximum intensity(cd): 1375.312
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=38.9
[C90/270]Total=38.9
Field angle(10%Imax): [C0/180]Total=89.5
[C90/270]Total=89.5
Maximum s/h(1/2): C0_180=0.62 C90_270=0.62
Maximum s/h(1/4): C0_180=0.68 C90_270=0.68
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 86.38%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 95.301%

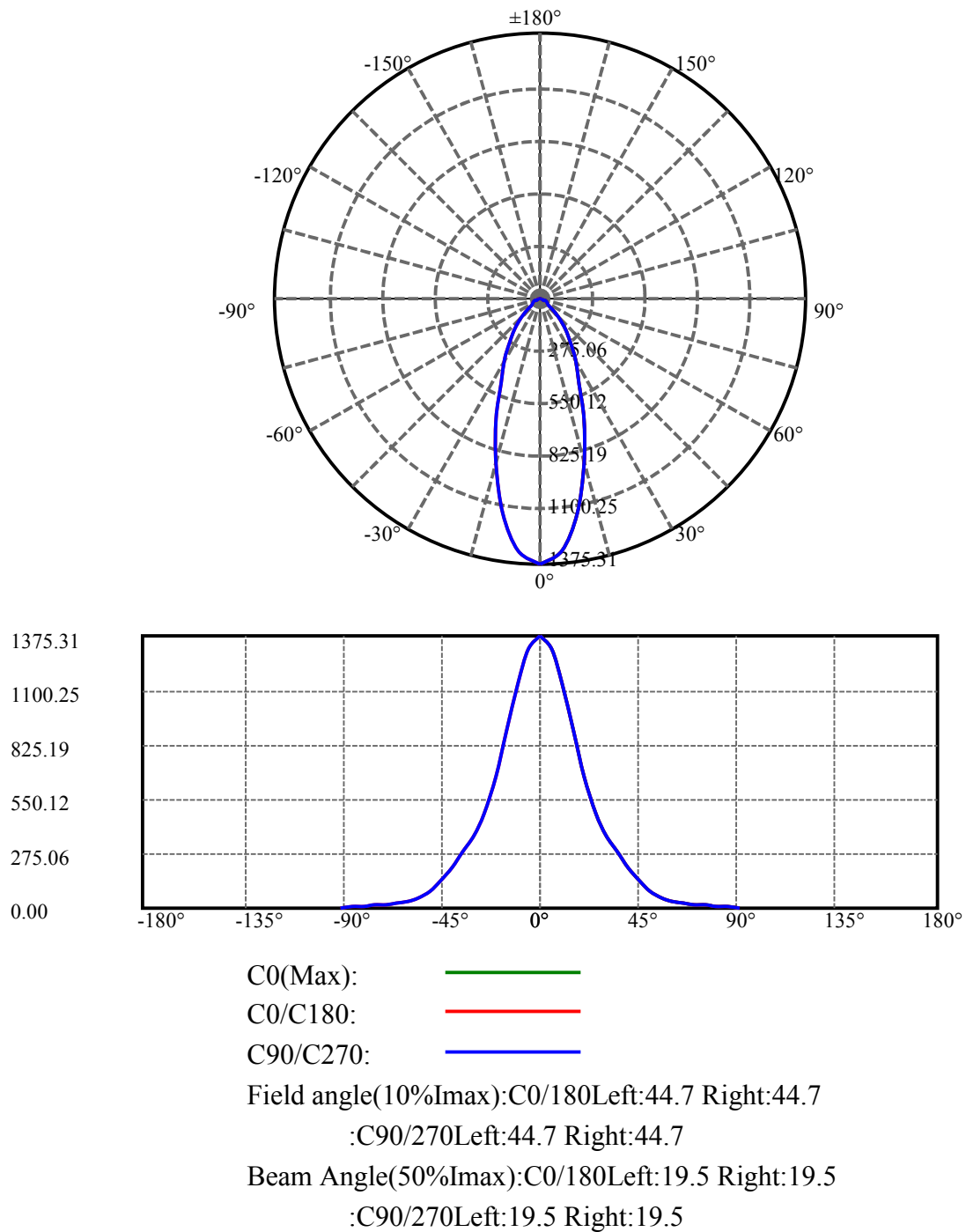
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1375.313	8.225	8.225	.727%	.848%
5.0	1308.797	62.526	70.75	5.524%	7.291%
10.0	1132.826	107.826	178.576	9.526%	18.402%
15.0	891.134	126.424	305	11.169%	31.429%
20.0	662.513	124.204	429.204	10.973%	44.228%
25.0	481.303	111.495	540.699	9.850%	55.717%
30.0	366.715	100.505	641.204	8.879%	66.074%
35.0	281.102	88.378	729.582	7.808%	75.181%
40.0	203.231	71.606	801.188	6.326%	82.560%
45.0	133.924	51.908	853.096	4.586%	87.909%
50.0	85.500	35.901	888.997	3.172%	91.609%
55.0	54.949	24.673	913.67	2.180%	94.151%
60.0	38.173	18.121	931.79	1.601%	96.018%
65.0	26.592	13.210	945.001	1.167%	97.380%
70.0	19.034	9.804	954.805	.866%	98.390%
75.0	13.099	6.936	961.74	.613%	99.105%
80.0	8.761	4.729	966.469	.418%	99.592%
85.0	5.351	2.922	969.391	.258%	99.893%
90.0	3.790	1.039	970.43	.092%	100.000%

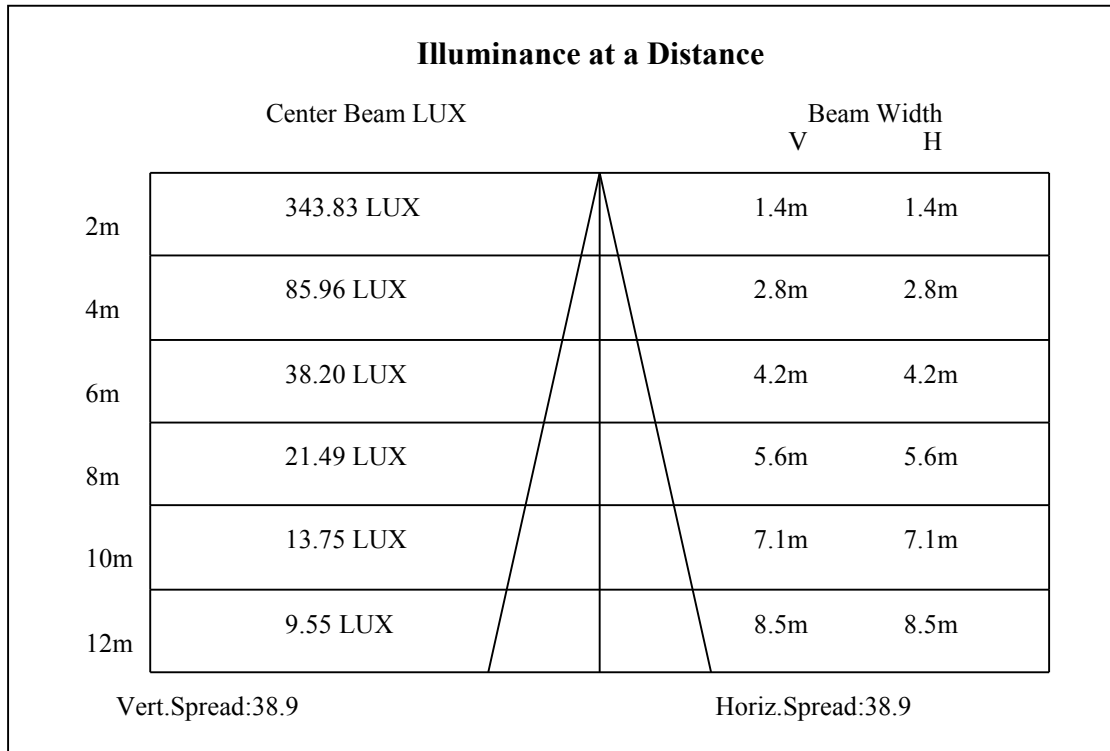
ZONAL LUMEN SUMMARY

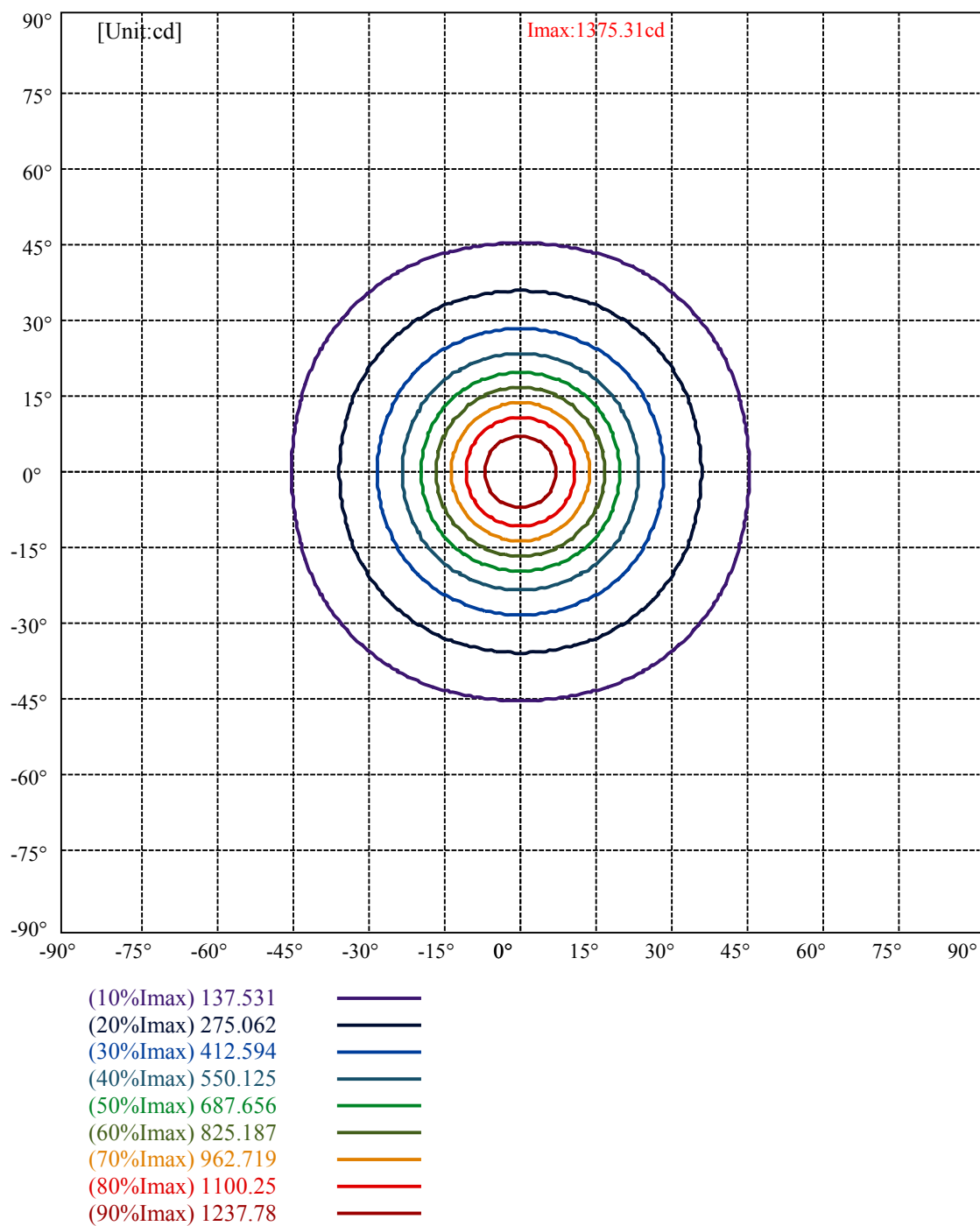
Zone	Lumens	%Lamp	%Fixt
0-30	641.20	56.65%	66.07%
0-40	801.19	70.78%	82.56%
0-60	931.79	82.32%	96.02%
0-90	969.39	85.64%	99.89%
0-120	969.39	85.64%	99.89%
0-180	970.43	85.73%	100.00%
60-90	55.72	4.92%	5.74%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-38.27	776.34	68.58%	80.00%

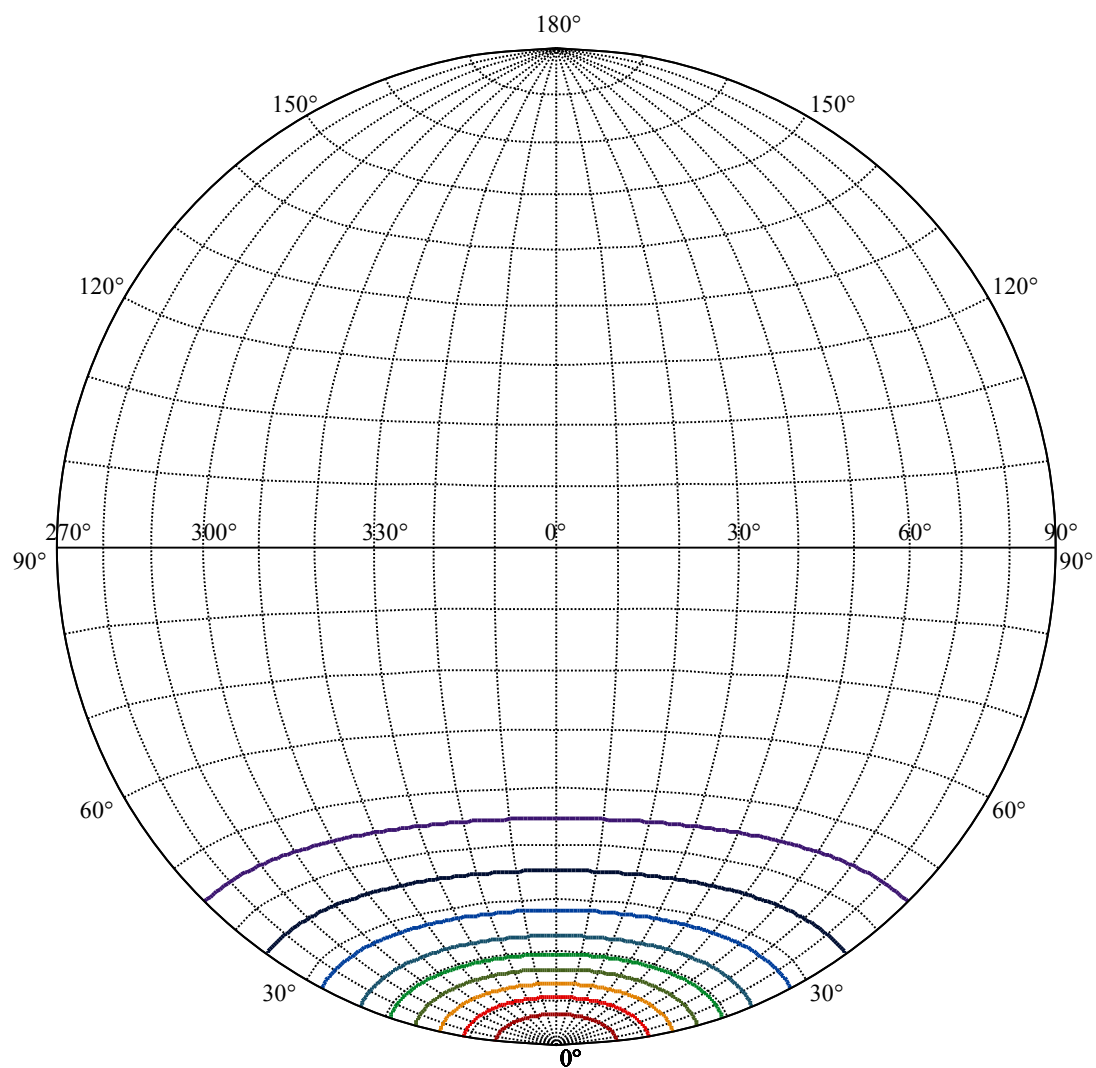
ZONAL LUMEN SUMMARY

0-10	178.58
10-20	250.63
20-30	212.00
30-40	159.98
40-50	87.81
50-60	42.79
60-70	23.01
70-80	11.66
80-90	2.92
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:1375.31

(10%Imax) 137.531

(20%Imax) 275.062

(30%Imax) 412.594

(40%Imax) 550.125

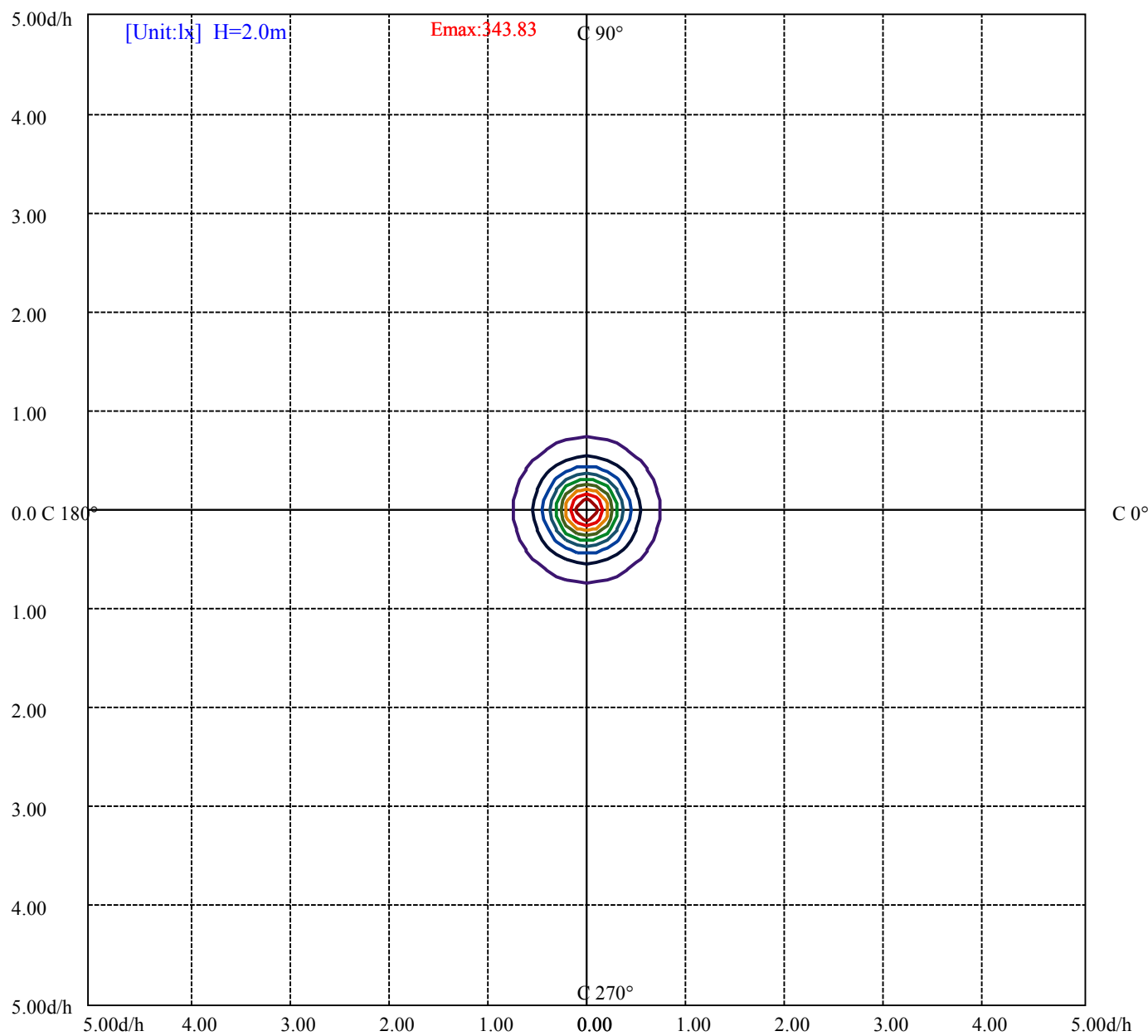
(50%Imax) 687.656

(60%Imax) 825.187

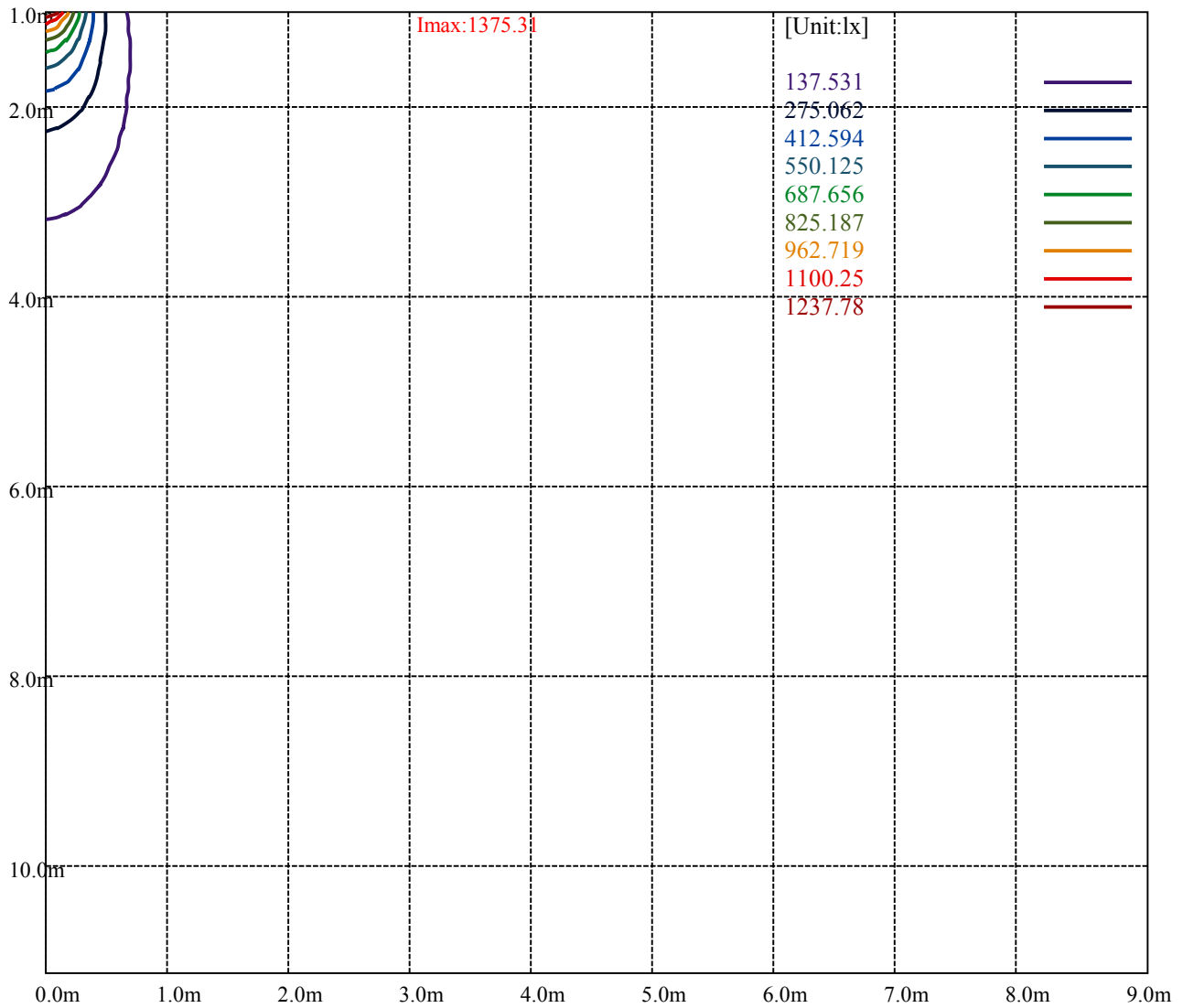
(70%Imax) 962.719

(80%Imax) 1100.25

(90%Imax) 1237.78



(10%Emax)	34.38275	
(20%Emax)	68.7655	
(30%Emax)	103.1482	
(40%Emax)	137.531	
(50%Emax)	171.9138	
(60%Emax)	206.2965	
(70%Emax)	240.6792	
(80%Emax)	275.0625	
(90%Emax)	309.445	



Luminance Table

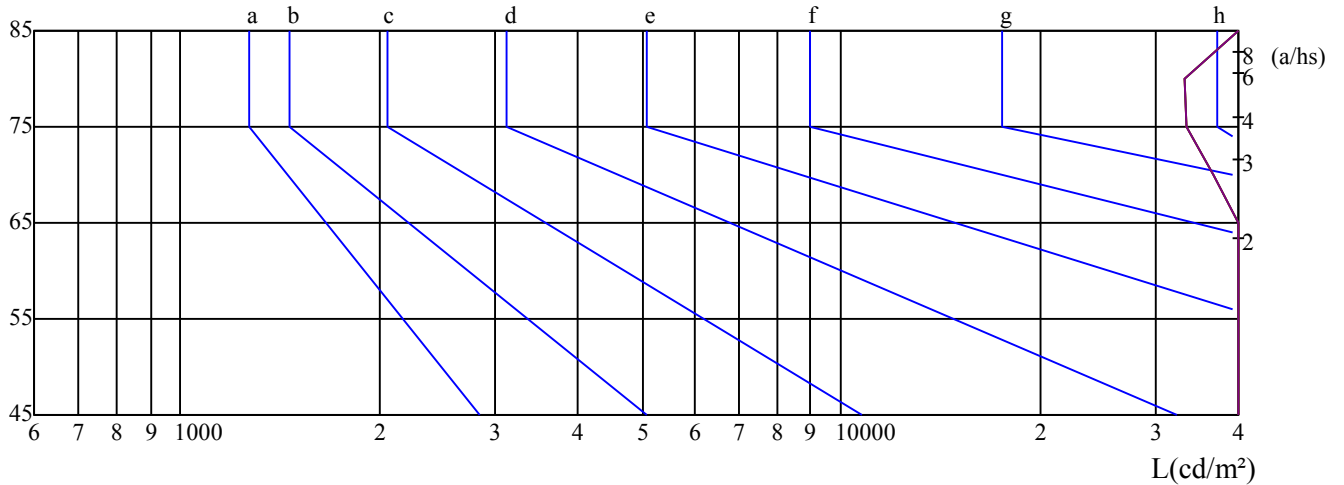
γ	45	50	55	60	65	70	75	80	85
C0	124522	87452	62986	50194	41369	36588	33275	33170	40364
C45	124522	87452	62986	50194	41369	36588	33275	33170	40364
C90	124522	87452	62986	50194	41369	36588	33275	33170	40364

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
41369	41369	41369	33275	33275	33275	40364	40364	40364

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

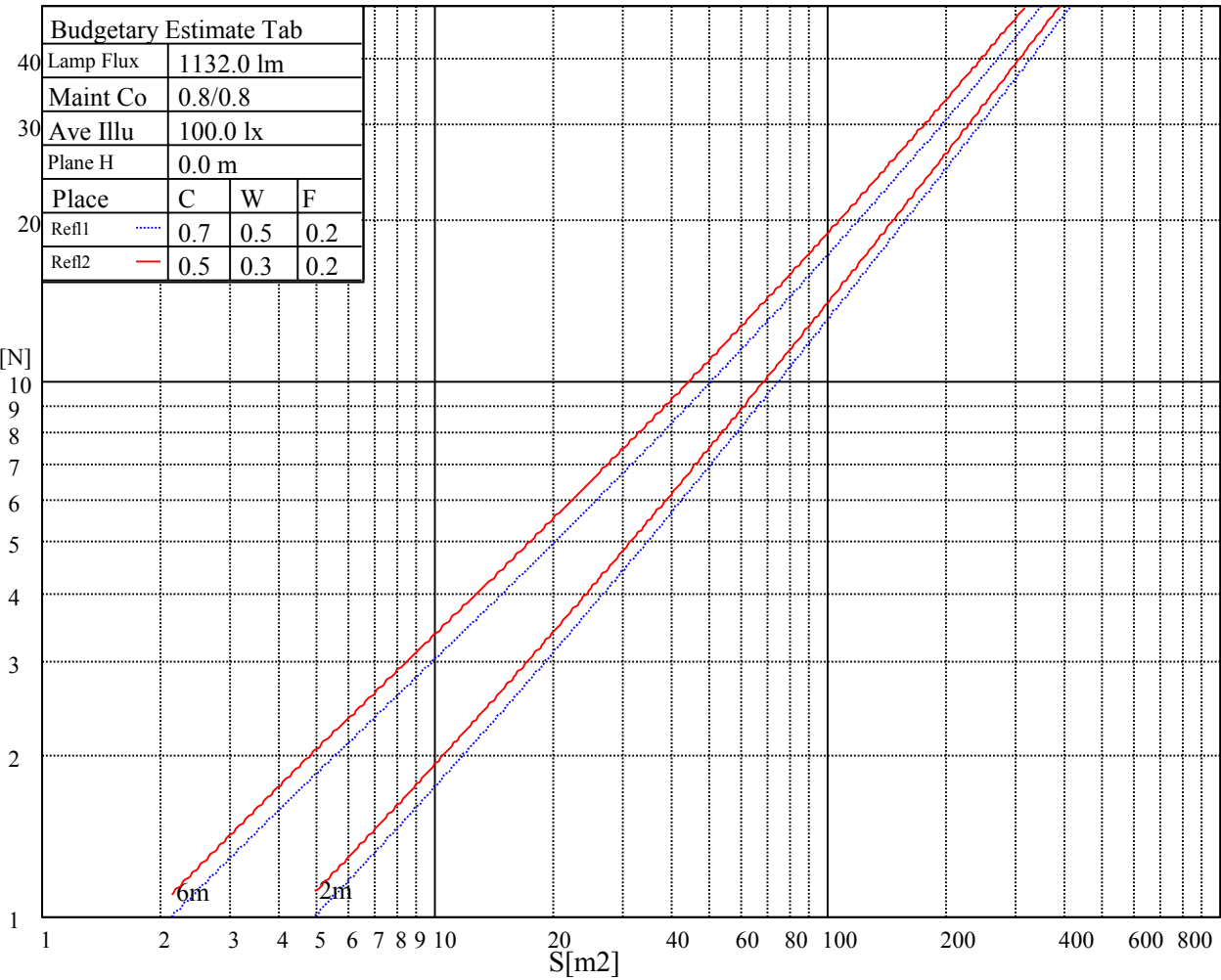
 $\gamma(^{\circ})$ 

C0 ———

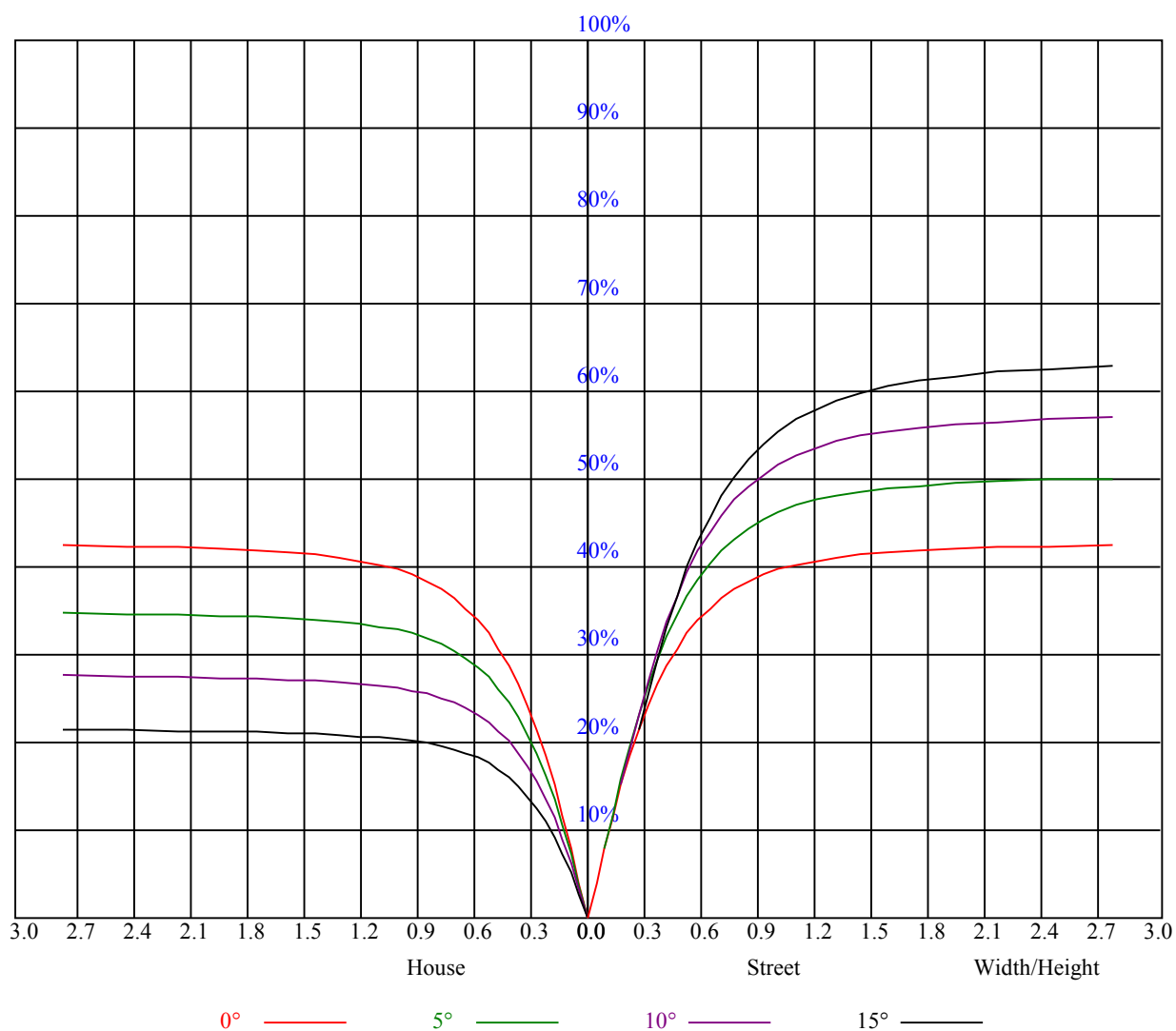
C45 ———

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	22.57	23.74	22.93	24.05	24.37	22.57	23.75	22.94	24.06	24.37
	3H	23.57	24.61	23.96	24.94	25.31	23.61	24.64	23.99	24.98	25.34
	4H	23.97	24.93	24.37	25.28	25.67	24.00	24.97	24.41	25.32	25.71
	6H	24.30	25.19	24.72	25.56	25.96	24.36	25.24	24.78	25.62	26.01
	8H	24.45	25.29	24.88	25.68	26.08	24.52	25.35	24.95	25.74	26.15
	12H	24.70	25.50	25.14	25.88	26.31	24.78	25.57	25.21	25.96	26.39
4H	2H	22.83	23.79	23.23	24.14	24.53	22.83	23.80	23.24	24.15	24.54
	3H	24.05	24.84	24.47	25.25	25.65	24.08	24.87	24.50	25.28	25.68
	4H	24.56	25.27	25.00	25.69	26.14	24.60	25.31	25.04	25.73	26.17
	6H	24.97	25.57	25.43	26.02	26.49	25.02	25.62	25.48	26.07	26.54
	8H	25.18	25.74	25.65	26.19	26.67	25.24	25.81	25.71	26.26	26.73
	12H	25.48	25.97	25.97	26.46	26.93	25.55	26.05	26.04	26.53	27.01
8H	4H	24.72	25.28	25.19	25.73	26.20	24.75	25.32	25.22	25.77	26.24
	6H	25.26	25.72	25.77	26.22	26.70	25.31	25.77	25.82	26.27	26.75
	8H	25.58	25.99	26.10	26.51	27.00	25.64	26.05	26.17	26.57	27.06
	12H	26.38	26.74	26.90	27.24	27.81	26.45	26.81	26.97	27.31	27.88
12H	4H	24.72	25.21	25.21	25.70	26.17	24.75	25.25	25.24	25.73	26.21
	6H	25.76	25.72	25.84	26.19	26.73	25.81	25.77	25.89	26.24	26.78
	8H	25.69	26.05	26.20	26.54	27.12	25.75	26.10	26.26	26.60	27.18
Variation with the observer position at spacings:											
S = 1.0H		1.1/-1.8					1.1/-1.8				
S = 1.5H		2.3/-2.4					2.3/-2.4				
S = 2.0H		4.1/-2.5					4.1/-2.5				
Standard tables:		BK2					BK2				
Uncorrected UGR		8.7					8.7				



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	1.03	1.03	1.03	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.86
1	0.94	0.92	0.89	0.92	0.90	0.88	0.89	0.87	0.85	0.85	0.84	0.83	0.82	0.81	0.80	0.79
2	0.87	0.83	0.80	0.86	0.82	0.79	0.83	0.80	0.77	0.80	0.78	0.75	0.78	0.76	0.74	0.72
3	0.81	0.76	0.72	0.80	0.75	0.72	0.77	0.74	0.71	0.75	0.72	0.69	0.73	0.71	0.68	0.67
4	0.75	0.70	0.66	0.74	0.70	0.66	0.72	0.68	0.65	0.71	0.67	0.64	0.69	0.66	0.64	0.62
5	0.71	0.65	0.61	0.70	0.65	0.61	0.68	0.64	0.60	0.67	0.63	0.60	0.65	0.62	0.59	0.58
6	0.66	0.61	0.57	0.66	0.61	0.57	0.64	0.60	0.56	0.63	0.59	0.56	0.62	0.58	0.56	0.54
7	0.63	0.57	0.53	0.62	0.57	0.53	0.61	0.56	0.53	0.60	0.56	0.53	0.59	0.55	0.52	0.51
8	0.59	0.54	0.50	0.59	0.54	0.50	0.58	0.53	0.50	0.57	0.53	0.50	0.56	0.52	0.50	0.48
9	0.56	0.51	0.48	0.56	0.51	0.47	0.55	0.50	0.47	0.54	0.50	0.47	0.53	0.50	0.47	0.46
10	0.54	0.48	0.45	0.53	0.48	0.45	0.52	0.48	0.45	0.52	0.48	0.45	0.51	0.47	0.45	0.44



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	1374.19	1337.63	1181.25	966.38	714.38	516.38	393.19	298.69	217.80	
45.0	1374.19	1332.56	1184.06	941.63	702.56	507.38	388.69	294.19	216.28	
90.0	1374.19	1299.94	1113.47	866.70	640.63	465.98	360.90	273.43	198.11	
135.0	1378.69	1314.56	1140.19	889.31	664.88	477.00	357.75	284.63	195.92	
180.0	1374.19	1287.56	1081.46	833.34	623.25	451.91	345.94	262.29	192.99	
225.0	1374.19	1274.63	1091.25	842.40	624.66	462.60	355.73	269.33	196.93	
270.0	1374.19	1310.63	1150.31	905.63	673.31	493.88	369.56	287.44	204.36	
315.0	1378.69	1312.88	1120.61	883.69	656.44	475.31	361.97	278.83	203.46	
360.0	1374.19	1337.63	1181.25	966.38	714.38	516.38	393.19	298.69	217.80	
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	
0.0	145.01	95.01	61.14	42.36	30.04	21.32	14.57	10.35	5.91	
45.0	146.98	95.18	60.81	43.54	29.42	20.87	14.46	9.96	5.96	
90.0	131.63	84.32	54.06	38.03	26.38	18.79	12.88	8.72	5.46	
135.0	128.31	81.90	52.82	36.06	25.03	18.34	12.66	8.04	5.06	
180.0	124.03	75.60	49.50	34.03	23.79	17.38	11.87	7.82	5.01	
225.0	126.68	79.14	50.18	35.49	25.03	17.94	12.54	8.27	5.18	
270.0	135.90	86.74	56.25	38.42	26.66	19.01	13.22	8.78	5.18	
315.0	132.86	86.12	54.84	37.46	26.38	18.62	12.60	8.16	5.06	
360.0	145.01	95.01	61.14	42.36	30.04	21.32	14.57	10.35	5.91	
C/γ(°)	90.0									
0.0	3.99									
45.0	3.88									
90.0	3.77									
135.0	3.77									
180.0	3.71									
225.0	3.71									
270.0	3.77									
315.0	3.71									
360.0	3.99									