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NATA

LumCAT: 1546-E	
Luminaire: 92.70.051.00	
Report No: NATA0100	Voltage(V): 35.5000
Test No: GC2019010303	Current(A): 0.2600
LampCAT: BRIDGELUX V8E G7	Power (W): 9.2300
Lamp flux(lm): 1392.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 21	Width(mm): 21
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1204.09
Efficiency(%): 86.50%
Lumens(lm)/Power(W): 131.34
Central intensity(cd): 1562.344
Maximum intensity(cd): 1562.344
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=45.6
[C90/270]Total=45.6
Field angle(10%Imax): [C0/180]Total=90.6
[C90/270]Total=90.6
Maximum s/h(1/2): C0_180=0.70 C90_270=0.70
Maximum s/h(1/4): C0_180=0.78 C90_270=0.78
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 87.09%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.303%

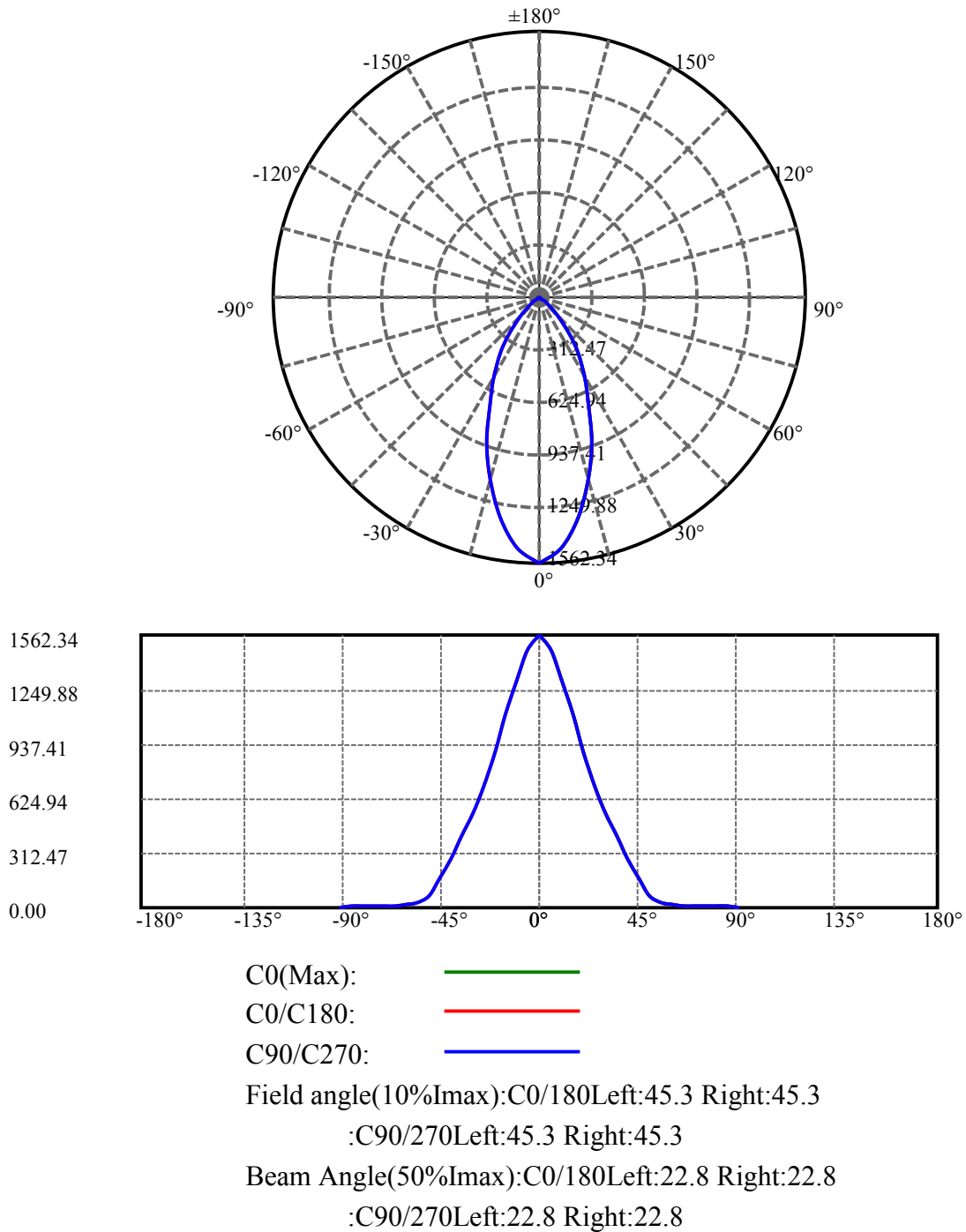
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1562.344	9.343	9.343	.671%	.776%
5.0	1479.797	70.695	80.038	5.079%	6.647%
10.0	1312.453	124.923	204.961	8.974%	17.022%
15.0	1103.238	156.515	361.476	11.244%	30.021%
20.0	894.846	167.760	529.236	12.052%	43.953%
25.0	693.598	160.674	689.91	11.543%	57.297%
30.0	546.300	149.724	839.634	10.756%	69.732%
35.0	403.552	126.876	966.51	9.115%	80.269%
40.0	283.823	100.001	1066.511	7.184%	88.574%
45.0	161.571	62.624	1129.135	4.499%	93.775%
50.0	68.477	28.753	1157.888	2.066%	96.163%
55.0	32.477	14.583	1172.471	1.048%	97.374%
60.0	15.012	7.126	1179.597	.512%	97.966%
65.0	11.145	5.536	1185.133	.398%	98.425%
70.0	9.703	4.998	1190.131	.359%	98.840%
75.0	8.852	4.687	1194.818	.337%	99.230%
80.0	8.058	4.350	1199.168	.312%	99.591%
85.0	6.659	3.636	1202.804	.261%	99.893%
90.0	4.704	1.289	1204.093	.093%	100.000%

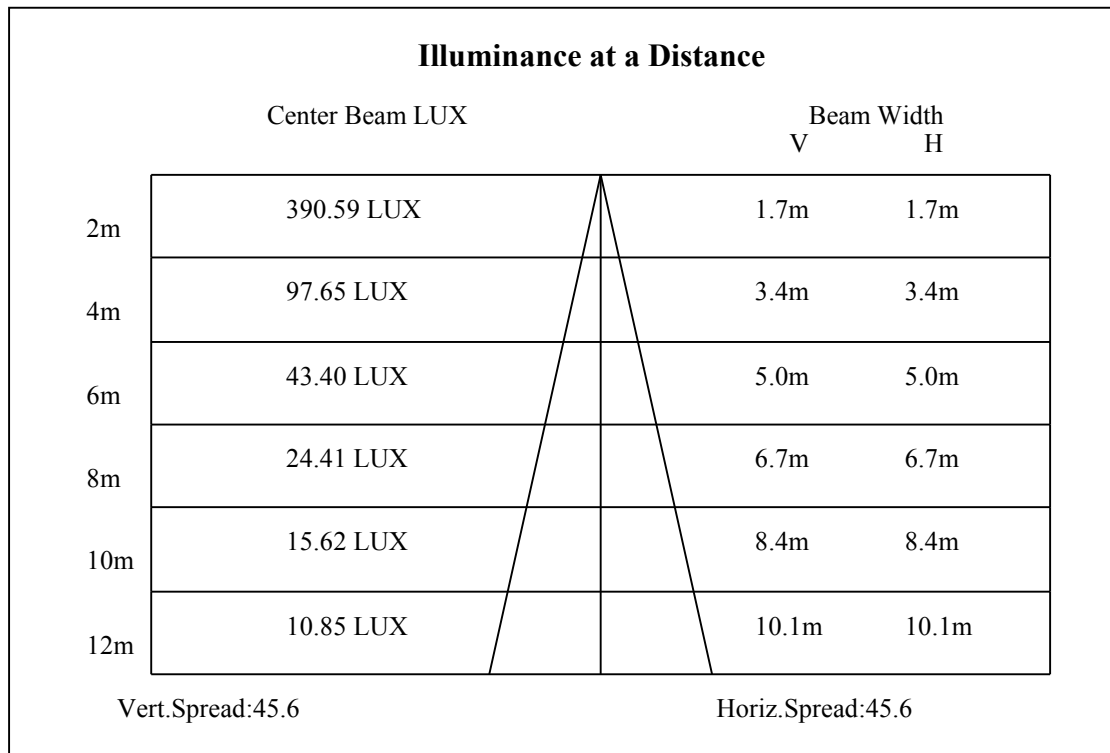
ZONAL LUMEN SUMMARY

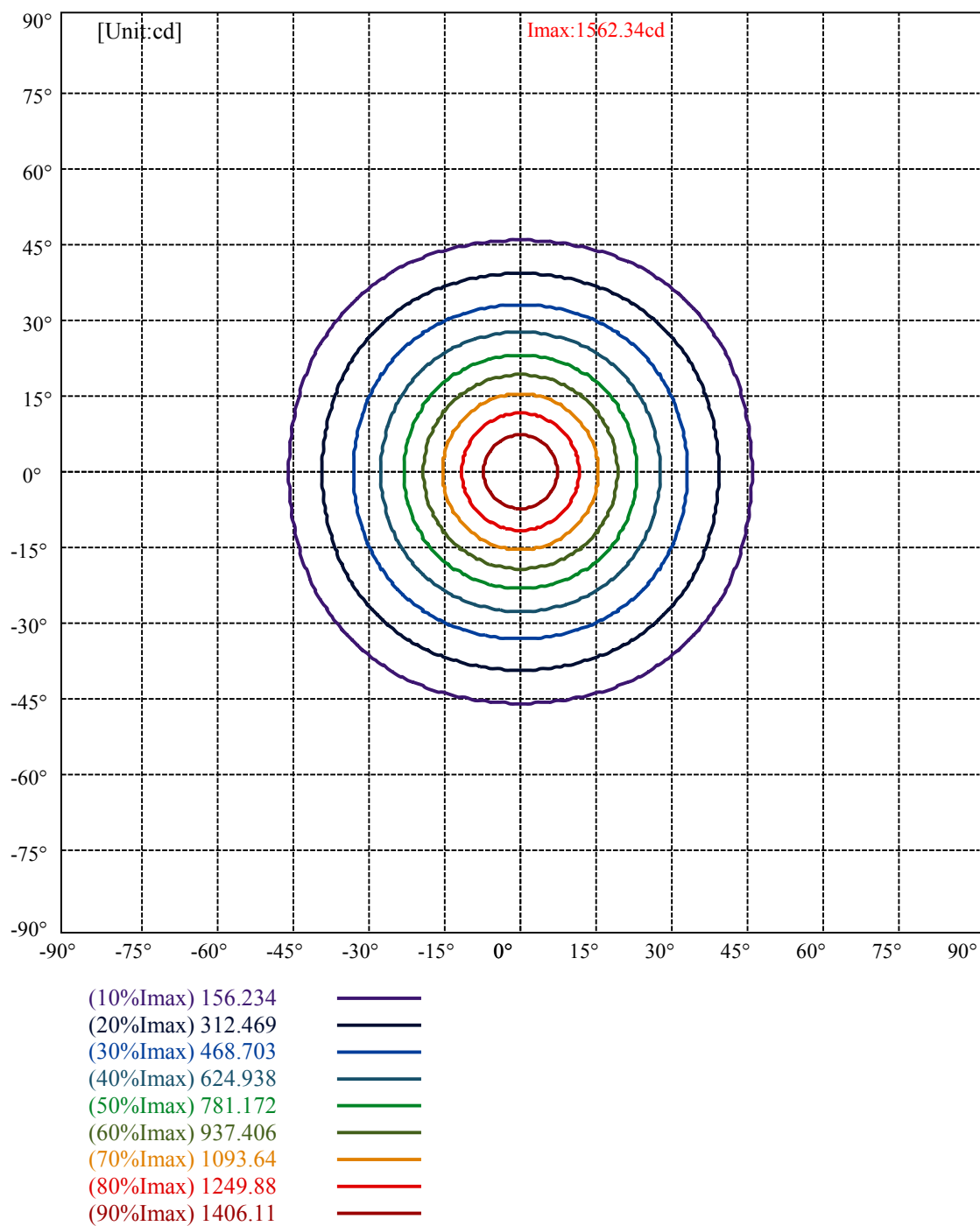
Zone	Lumens	%Lamp	%Fixt
0-30	839.63	60.32%	69.73%
0-40	1066.51	76.62%	88.57%
0-60	1179.60	84.74%	97.97%
0-90	1202.80	86.41%	99.89%
0-120	1202.80	86.41%	99.89%
0-180	1204.09	86.50%	100.00%
60-90	30.33	2.18%	2.52%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-34.87	963.27	69.20%	80.00%

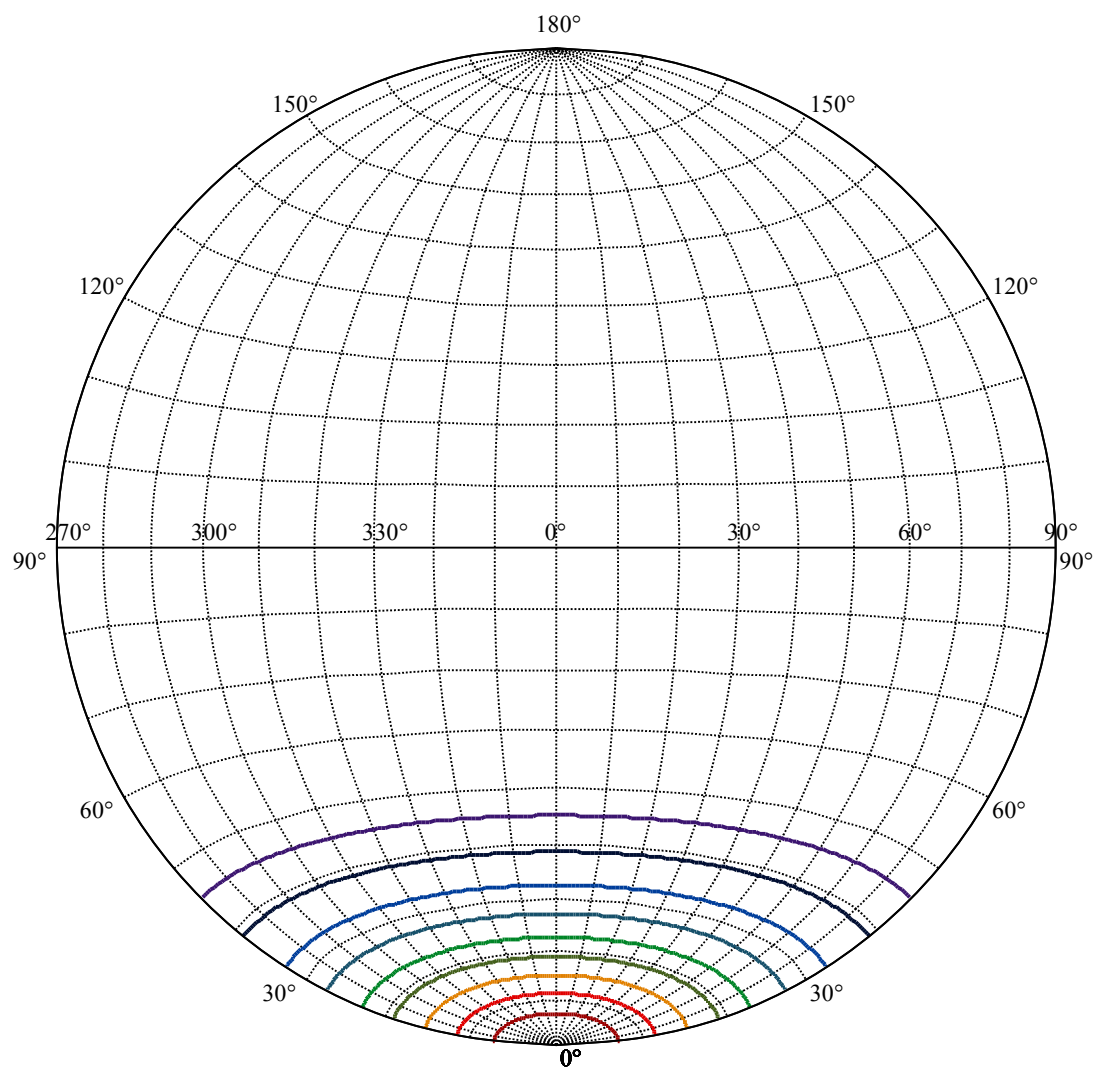
ZONAL LUMEN SUMMARY

0-10	204.96
10-20	324.28
20-30	310.40
30-40	226.88
40-50	91.38
50-60	21.71
60-70	10.53
70-80	9.04
80-90	3.64
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:1562.34

(10%Imax) 156.234

(20%Imax) 312.469

(30%Imax) 468.703

(40%Imax) 624.938

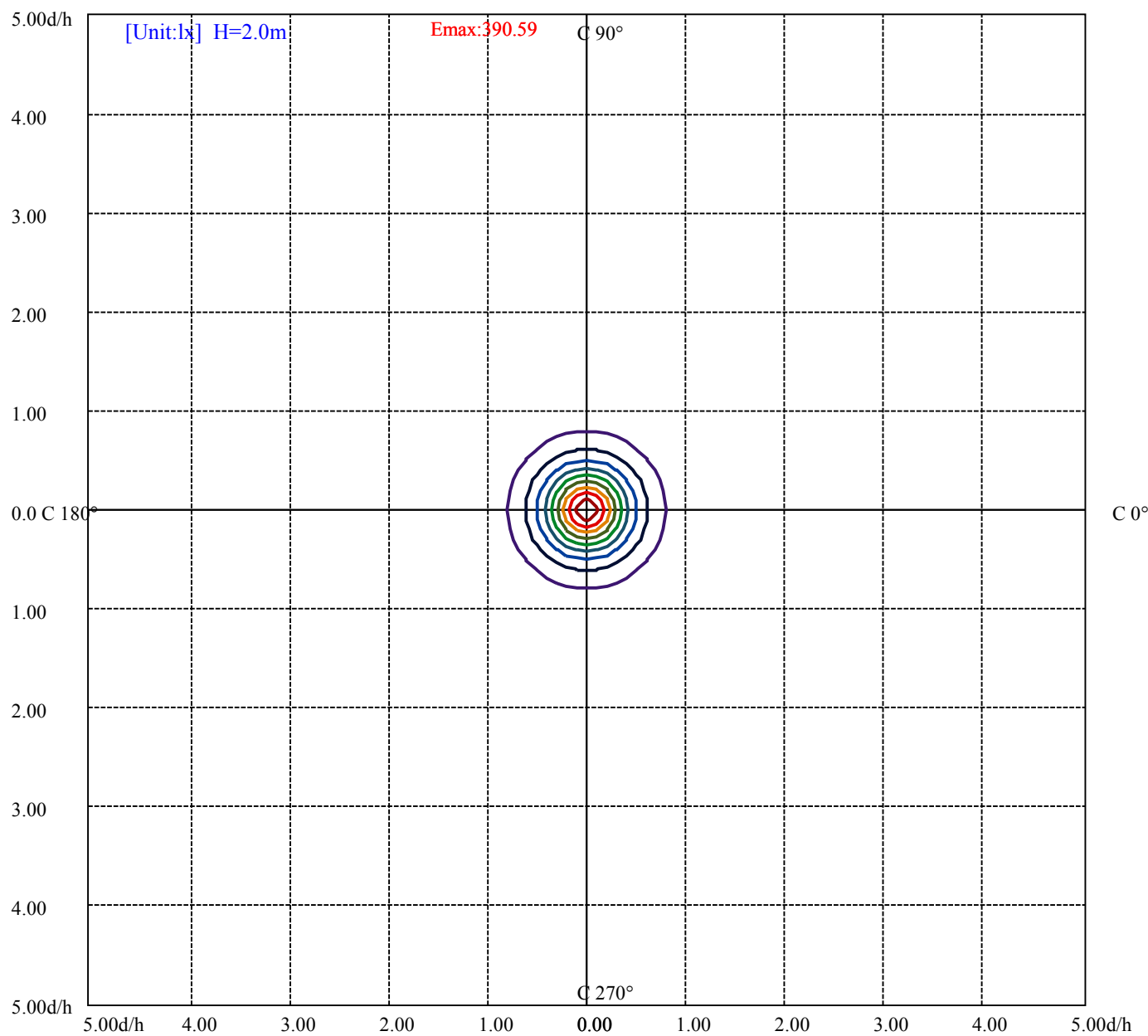
(50%Imax) 781.172

(60%Imax) 937.406

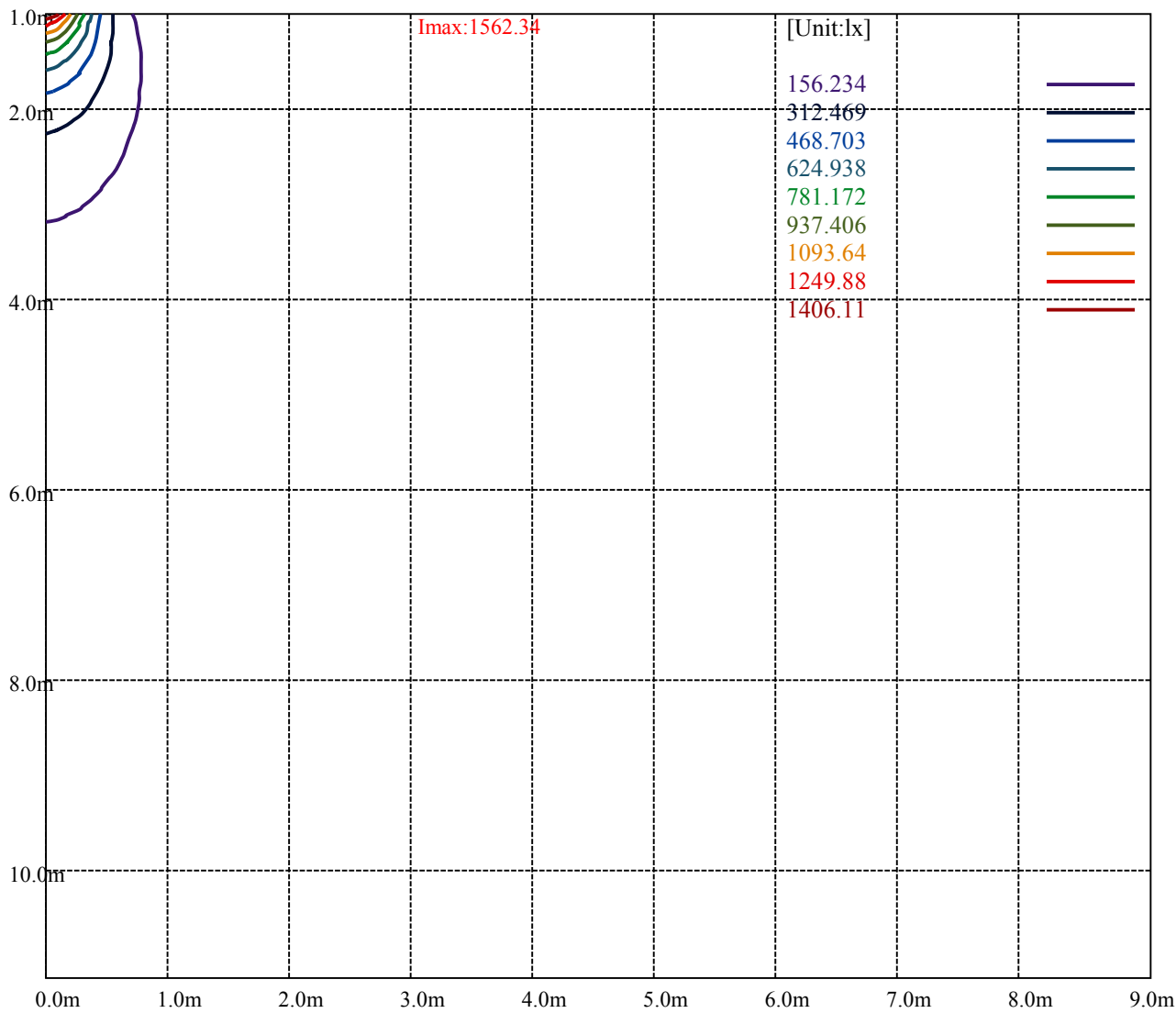
(70%Imax) 1093.64

(80%Imax) 1249.88

(90%Imax) 1406.11



(10%E _{max}) 39.0585	—
(20%E _{max}) 78.117	—
(30%E _{max}) 117.1755	—
(40%E _{max}) 156.2343	—
(50%E _{max}) 195.2928	—
(60%E _{max}) 234.3513	—
(70%E _{max}) 273.41	—
(80%E _{max}) 312.4675	—
(90%E _{max}) 351.5275	—



Luminance Table

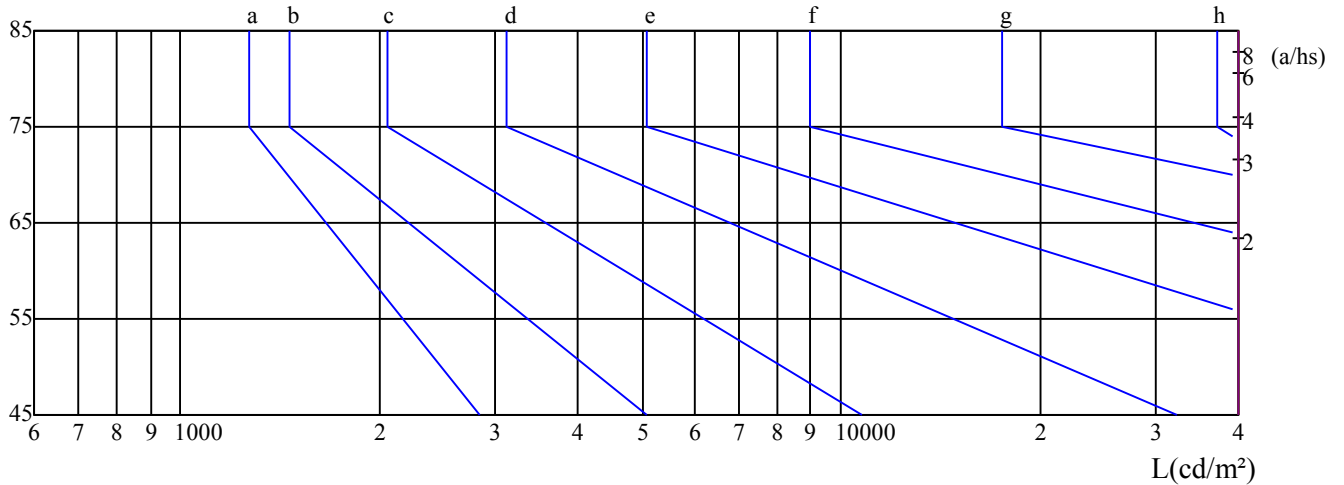
γ	45	50	55	60	65	70	75	80	85
C0	518132	241569	128396	68080	59796	64331	77557	105222	173240
C45	518132	241569	128396	68080	59796	64331	77557	105222	173240
C90	518132	241569	128396	68080	59796	64331	77557	105222	173240

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
59796	59796	59796	77557	77557	77557	173240	173240	173240

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

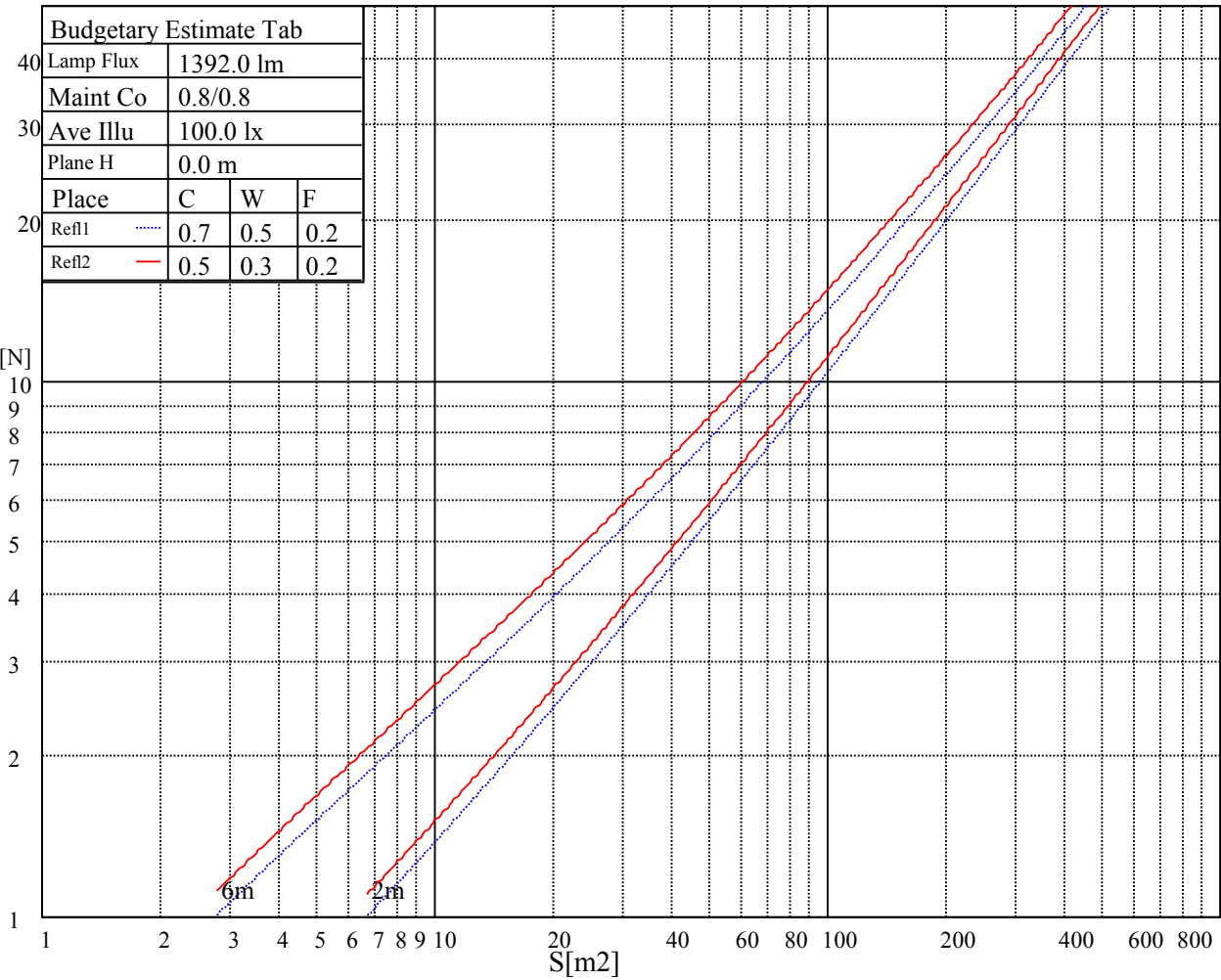
 $\gamma(^{\circ})$ 

C0 ———

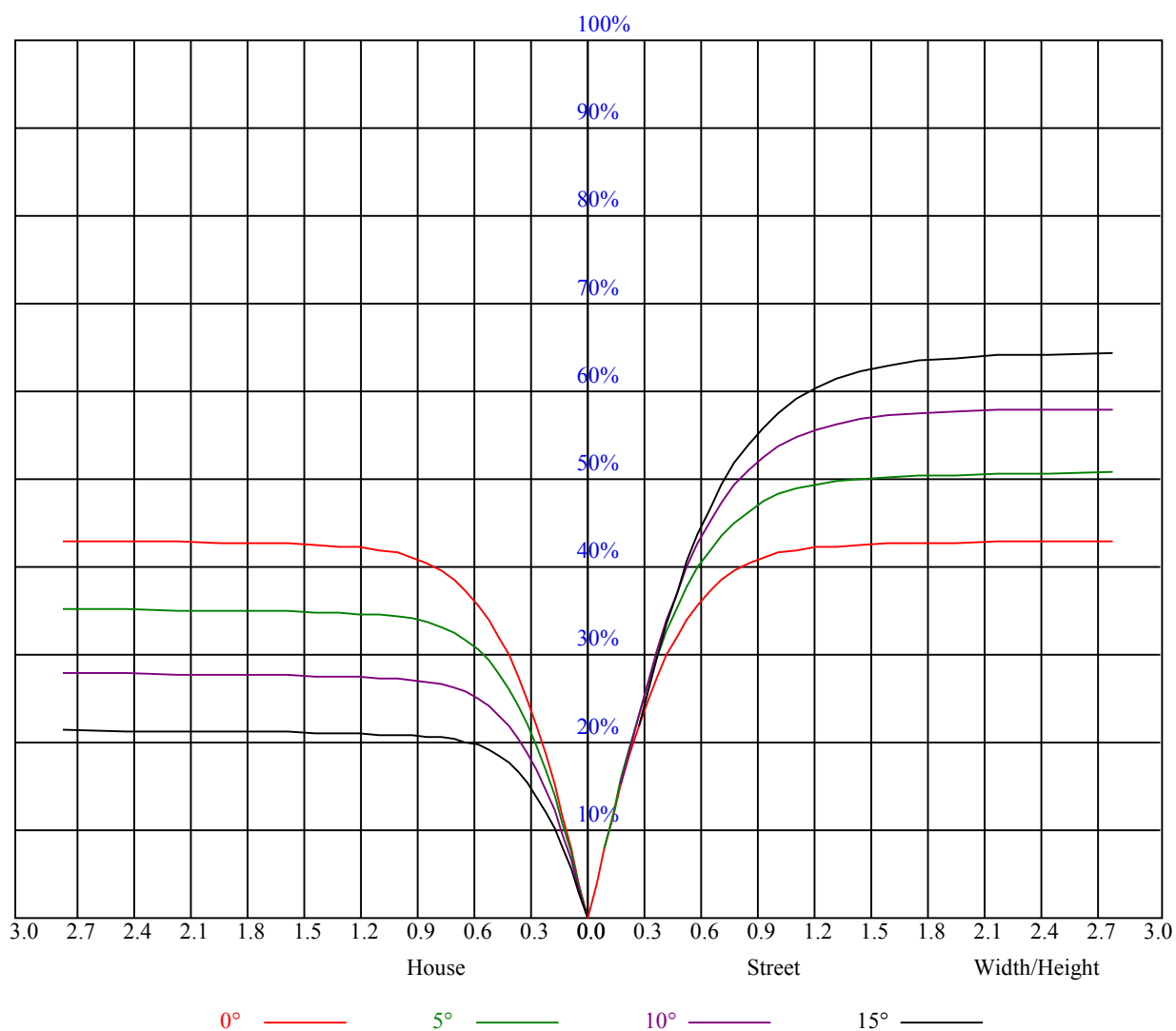
C45 ———

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	20.48	21.57	20.84	21.88	22.20	20.90	21.99	21.26	22.30	22.62
	3H	21.50	22.46	21.88	22.79	23.16	21.71	22.67	22.09	23.00	23.37
	4H	22.29	23.18	22.70	23.54	23.92	22.27	23.16	22.67	23.51	23.90
	6H	23.26	24.08	23.68	24.45	24.85	23.11	23.93	23.53	24.30	24.70
	8H	23.79	24.56	24.23	24.95	25.36	23.63	24.40	24.06	24.79	25.20
	12H	24.70	25.43	25.13	25.81	26.25	24.53	25.27	24.97	25.65	26.08
4H	2H	20.60	21.49	21.00	21.84	22.23	20.97	21.86	21.38	22.22	22.60
	3H	21.96	22.69	22.38	23.10	23.50	22.10	22.83	22.52	23.23	23.64
	4H	23.01	23.65	23.44	24.08	24.52	22.90	23.55	23.34	23.97	24.42
	6H	24.10	24.66	24.57	25.11	25.58	23.90	24.46	24.37	24.91	25.38
	8H	24.81	25.32	25.28	25.77	26.25	24.60	25.12	25.08	25.57	26.05
	12H	25.79	26.24	26.28	26.73	27.21	25.60	26.05	26.09	26.54	27.02
8H	4H	23.37	23.89	23.85	24.34	24.81	23.29	23.80	23.76	24.25	24.73
	6H	24.78	25.20	25.29	25.70	26.19	24.61	25.03	25.12	25.53	26.02
	8H	25.68	26.05	26.21	26.57	27.07	25.51	25.88	26.04	26.40	26.90
	12H	26.92	27.25	27.44	27.75	28.33	26.77	27.10	27.29	27.59	28.17
12H	4H	23.46	23.91	23.95	24.40	24.87	23.38	23.83	23.87	24.32	24.80
	6H	25.35	25.36	25.51	25.83	26.37	25.20	25.20	25.36	25.67	26.22
	8H	25.99	26.32	26.51	26.82	27.40	25.84	26.17	26.36	26.67	27.24
Variation with the observer position at spacings:											
S = 1.0H		2.5/-5.5					2.5/-5.5				
S = 1.5H		4.6/-5.6					4.6/-5.6				
S = 2.0H		6.3/-4.8					6.3/-4.8				
Standard tables:		BK2					BK2				
Uncorrected UGR		12.2					12.2				



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	1.04	1.04	1.04	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.87
1	0.95	0.93	0.91	0.93	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	0.82	0.87	0.84	0.81	0.84	0.82	0.79	0.82	0.79	0.77	0.79	0.77	0.76	0.74
3	0.83	0.78	0.75	0.82	0.77	0.74	0.79	0.76	0.73	0.77	0.74	0.72	0.75	0.73	0.71	0.69
4	0.77	0.73	0.69	0.76	0.72	0.68	0.75	0.71	0.68	0.73	0.69	0.67	0.71	0.68	0.66	0.65
5	0.73	0.68	0.64	0.72	0.67	0.63	0.70	0.66	0.63	0.69	0.65	0.62	0.67	0.64	0.62	0.60
6	0.68	0.63	0.59	0.68	0.63	0.59	0.66	0.62	0.59	0.65	0.61	0.58	0.64	0.61	0.58	0.57
7	0.65	0.59	0.56	0.64	0.59	0.56	0.63	0.58	0.55	0.62	0.58	0.55	0.61	0.57	0.55	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	0.52	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	0.53	0.49	0.47	0.53	0.49	0.46	0.45



NATA 1546-E

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	1564.88	1476.00	1322.44	1117.13	910.69	711.00	568.13	421.31	293.06		
45.0	1560.94	1474.31	1316.81	1094.63	890.44	689.06	537.19	384.75	284.06		
90.0	1561.50	1467.00	1283.06	1066.39	854.72	653.46	503.78	362.93	243.28		
135.0	1562.06	1503.00	1337.63	1145.81	916.88	704.81	552.94	410.63	285.19		
180.0	1564.88	1481.63	1312.88	1087.48	876.49	686.36	546.02	407.70	292.44		
225.0	1560.94	1480.50	1301.06	1100.59	889.20	685.58	548.10	408.60	286.14		
270.0	1561.50	1488.38	1339.88	1139.06	939.94	733.50	572.06	438.19	307.69		
315.0	1562.06	1467.56	1285.88	1074.83	880.43	685.01	542.19	394.31	278.72		
360.0	1564.88	1476.00	1322.44	1117.13	910.69	711.00	568.13	421.31	293.06		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	169.65	72.00	37.46	13.61	10.91	9.17	8.10	8.83	6.86		
45.0	142.65	57.83	30.99	14.18	11.76	10.74	11.42	11.31	8.49		
90.0	129.09	45.96	21.94	13.78	11.76	11.08	11.14	9.17	7.03		
135.0	164.19	72.00	26.72	16.54	11.87	10.18	9.00	7.88	6.81		
180.0	172.97	71.10	31.95	16.99	11.08	9.39	7.88	6.69	5.85		
225.0	171.56	74.98	34.20	17.16	10.69	9.06	7.82	6.81	6.13		
270.0	183.26	88.54	39.21	15.24	10.86	9.28	8.04	7.09	5.91		
315.0	159.19	65.42	37.35	12.60	10.24	8.72	7.43	6.69	6.19		
360.0	169.65	72.00	37.46	13.61	10.91	9.17	8.10	8.83	6.86		
C/ γ (°)	90.0										
0.0	5.06										
45.0	4.84										
90.0	4.56										
135.0	4.56										
180.0	4.56										
225.0	4.61										
270.0	4.61										
315.0	4.84										
360.0	5.06										