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Nata

LumCAT: 4-2219-A	
Luminaire: BJB47.319.2030	
Report No: NT2017092010	Voltage(V): 52.7000
Test No: GC2017092010	Current(A): 0.8000
LampCAT: SEOUL SAWx22	Power (W): 42.1600
Lamp flux(lm): 5814.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 100	Width(mm): 100
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 5123.86
Efficiency(%): 88.13%
Lumens(lm)/Power(W): 123.45
Central intensity(cd): 14310.530
Maximum intensity(cd): 14310.530
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=21.6
[C90/270]Total=21.6
Field angle(10%Imax): [C0/180]Total=69.1
[C90/270]Total=69.1
Maximum s/h(1/2): C0_180=0.35 C90_270=0.35
Maximum s/h(1/4): C0_180=0.51 C90_270=0.51
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.52%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.239%

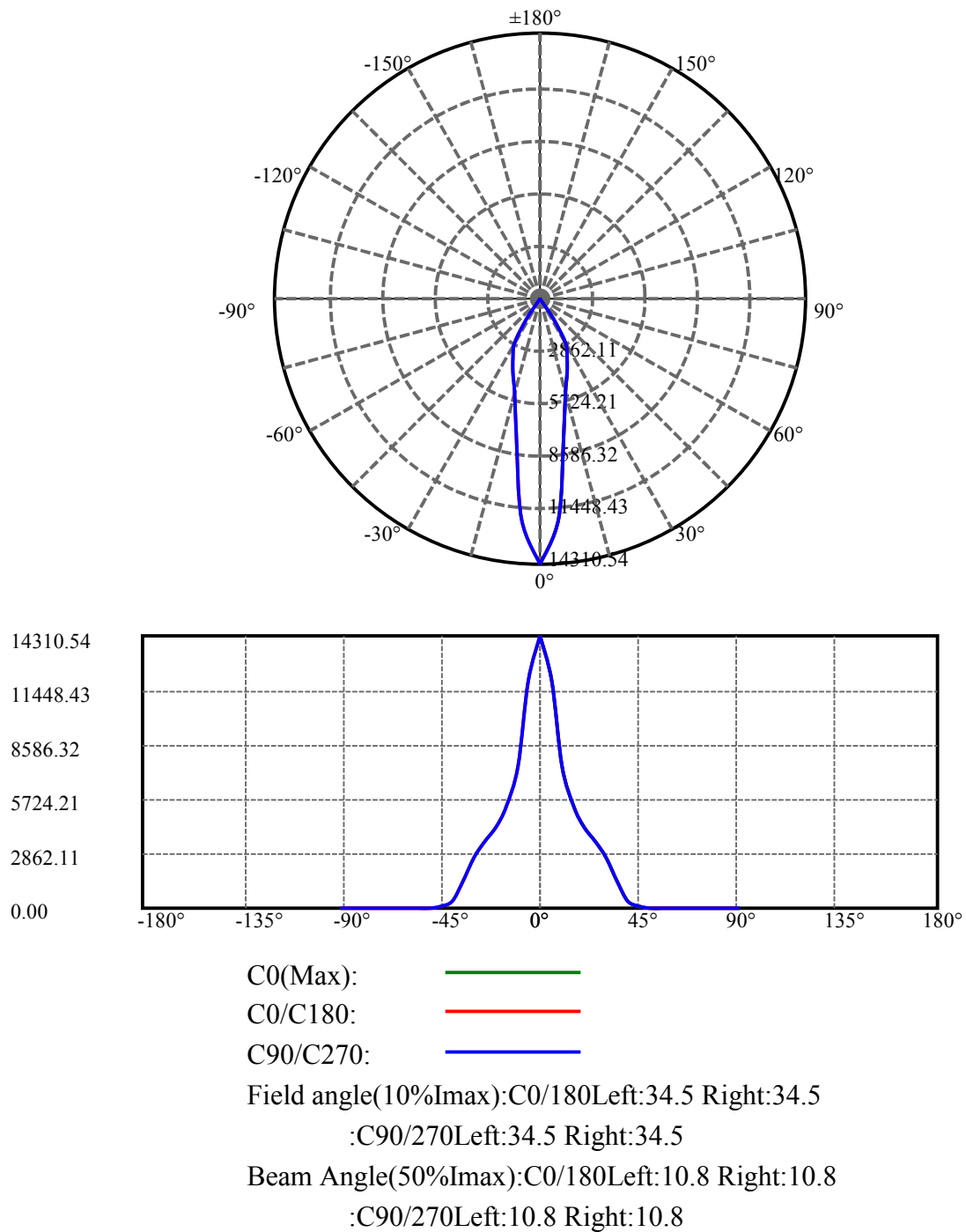
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	14310.535	85.580	85.58	1.472%	1.670%
5.0	11915.100	569.224	654.804	9.791%	12.779%
10.0	7496.617	713.551	1368.355	12.273%	26.706%
15.0	5329.941	756.150	2124.505	13.006%	41.463%
20.0	4295.982	805.385	2929.89	13.853%	57.181%
25.0	3471.031	804.074	3733.964	13.830%	72.874%
30.0	2705.196	741.410	4475.374	12.752%	87.344%
35.0	1301.100	409.064	4884.438	7.036%	95.327%
40.0	348.947	122.947	5007.385	2.115%	97.727%
45.0	52.696	20.424	5027.809	.351%	98.125%
50.0	28.099	11.799	5039.608	.203%	98.356%
55.0	23.564	10.580	5050.188	.182%	98.562%
60.0	22.497	10.680	5060.868	.184%	98.771%
65.0	22.023	10.940	5071.808	.188%	98.984%
70.0	21.795	11.226	5083.035	.193%	99.203%
75.0	21.678	11.478	5094.513	.197%	99.427%
80.0	21.617	11.669	5106.181	.201%	99.655%
85.0	21.589	11.789	5117.97	.203%	99.885%
90.0	21.506	5.894	5123.864	.101%	100.000%

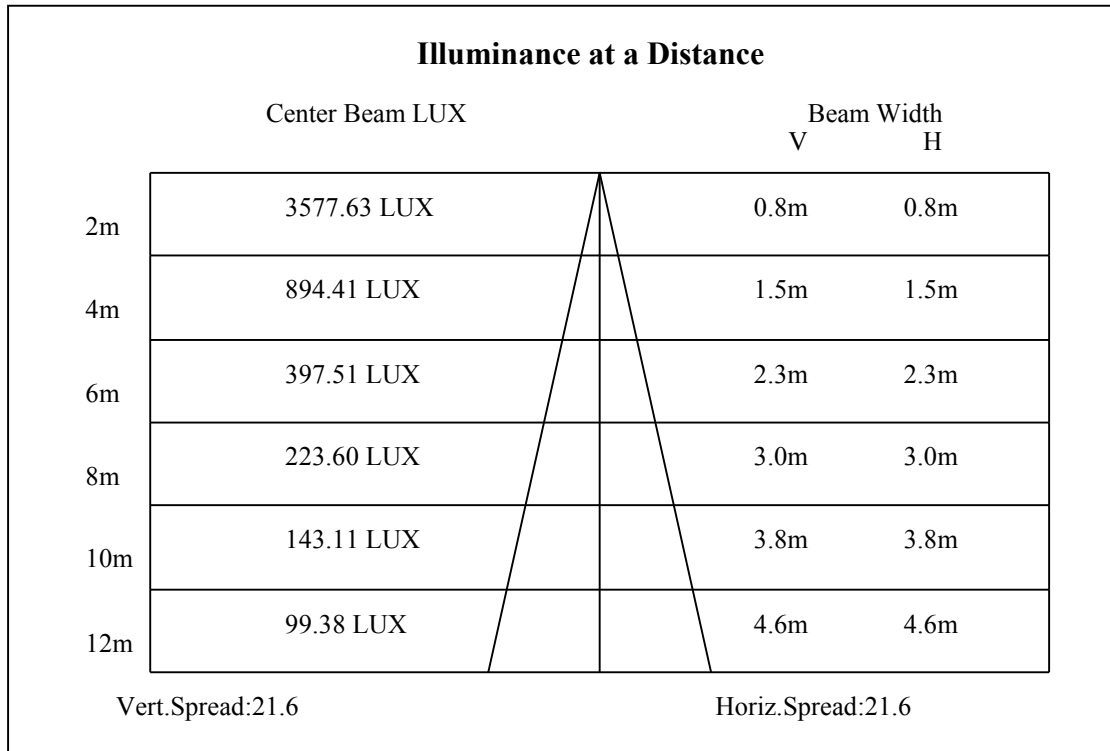
ZONAL LUMEN SUMMARY

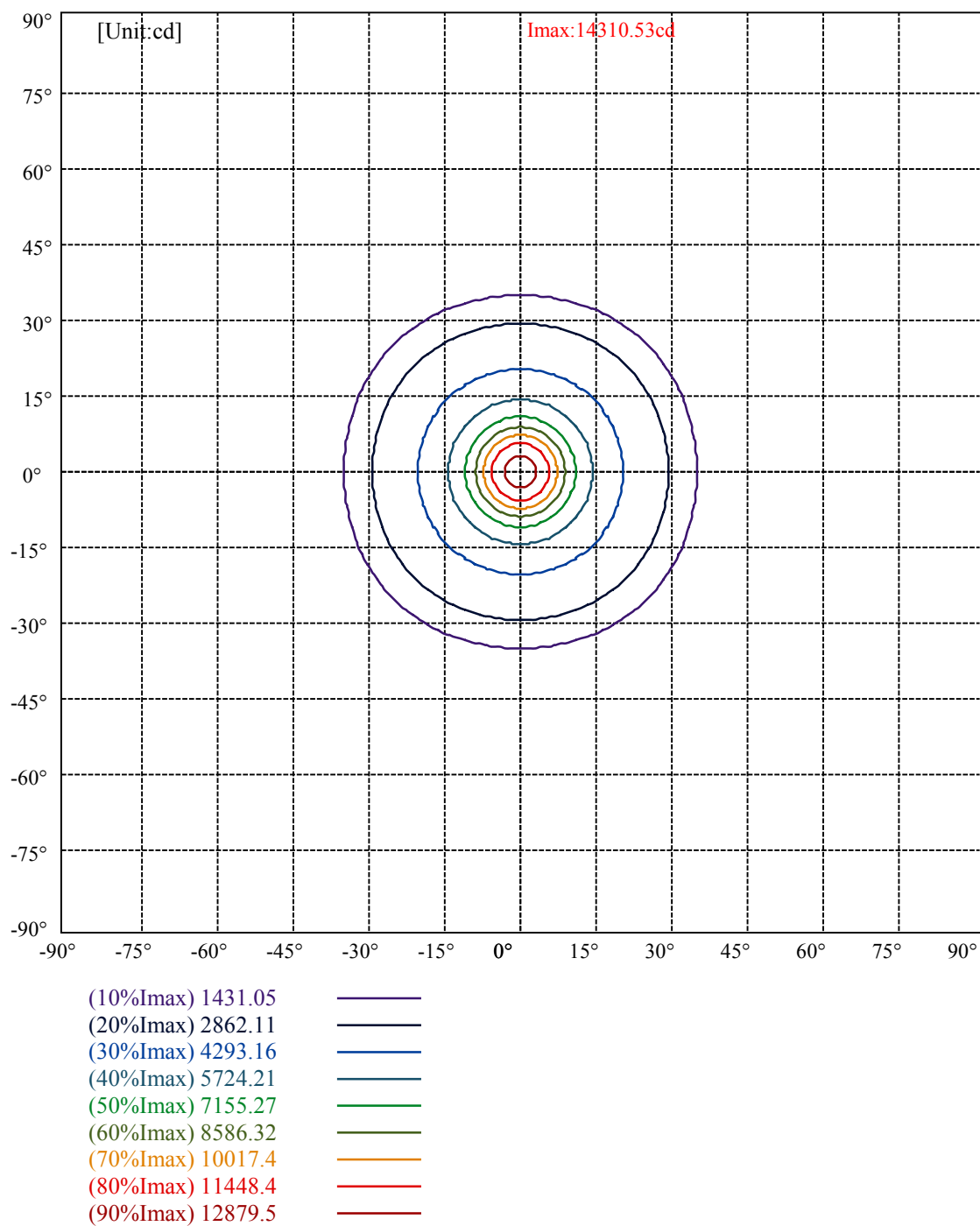
Zone	Lumens	%Lamp	%Fixt
0-30	4475.37	76.98%	87.34%
0-40	5007.38	86.13%	97.73%
0-60	5060.87	87.05%	98.77%
0-90	5117.97	88.03%	99.88%
0-120	5117.97	88.03%	99.88%
0-180	5123.86	88.13%	100.00%
60-90	67.78	1.17%	1.32%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.46	4099.09	70.50%	80.00%

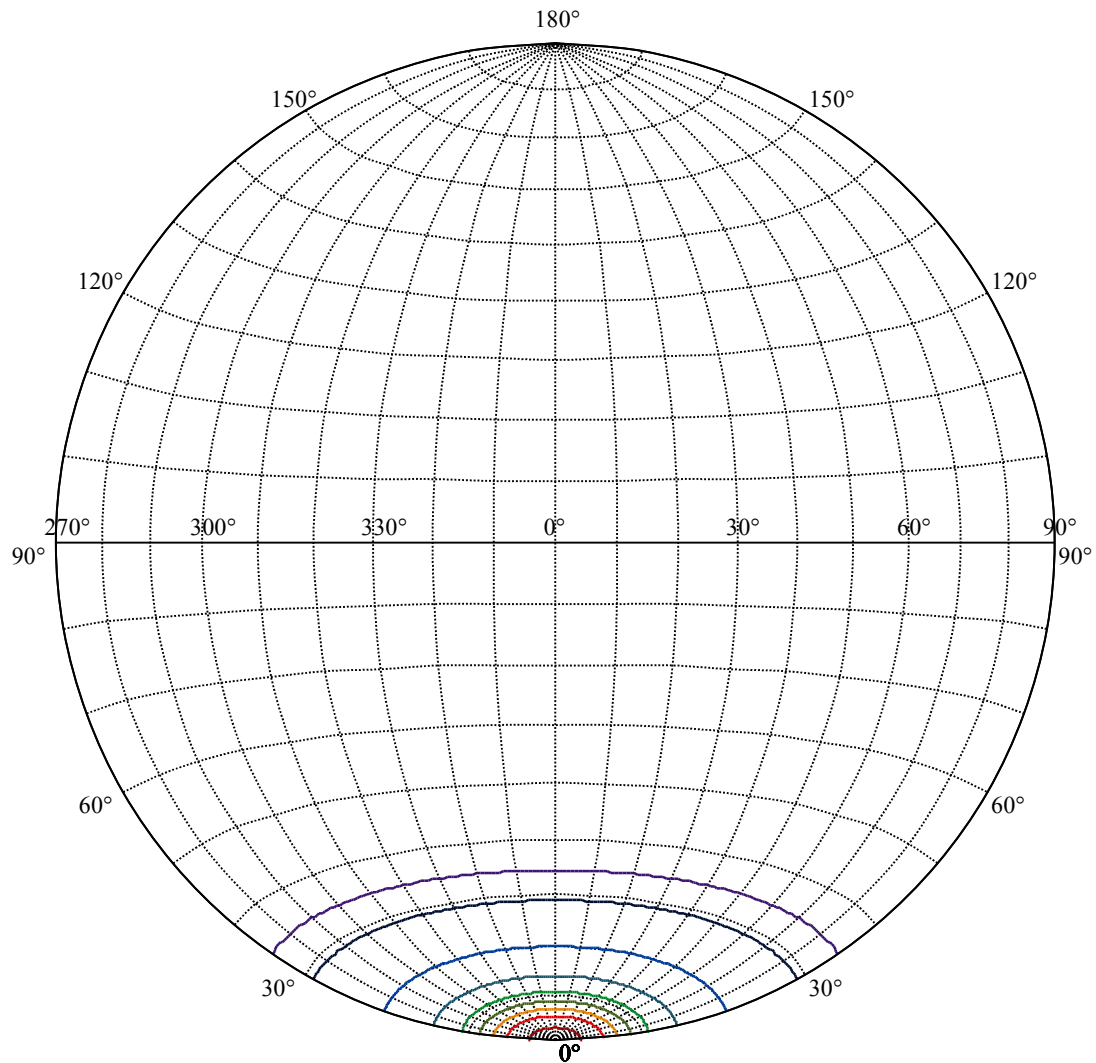
ZONAL LUMEN SUMMARY

0-10	1368.35
10-20	1561.54
20-30	1545.48
30-40	532.01
40-50	32.22
50-60	21.26
60-70	22.17
70-80	23.15
80-90	11.79
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









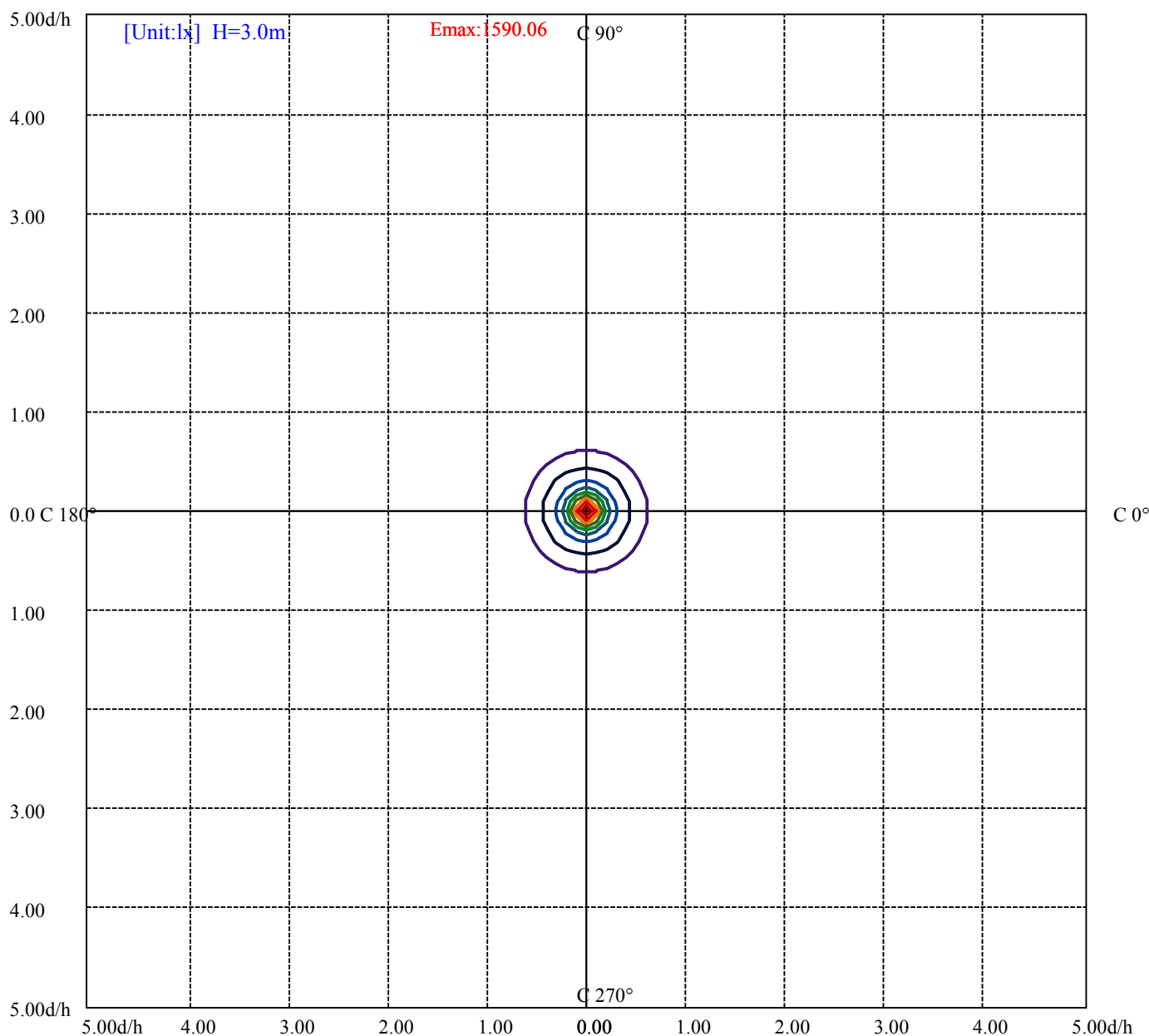
House

[Unit:cd]

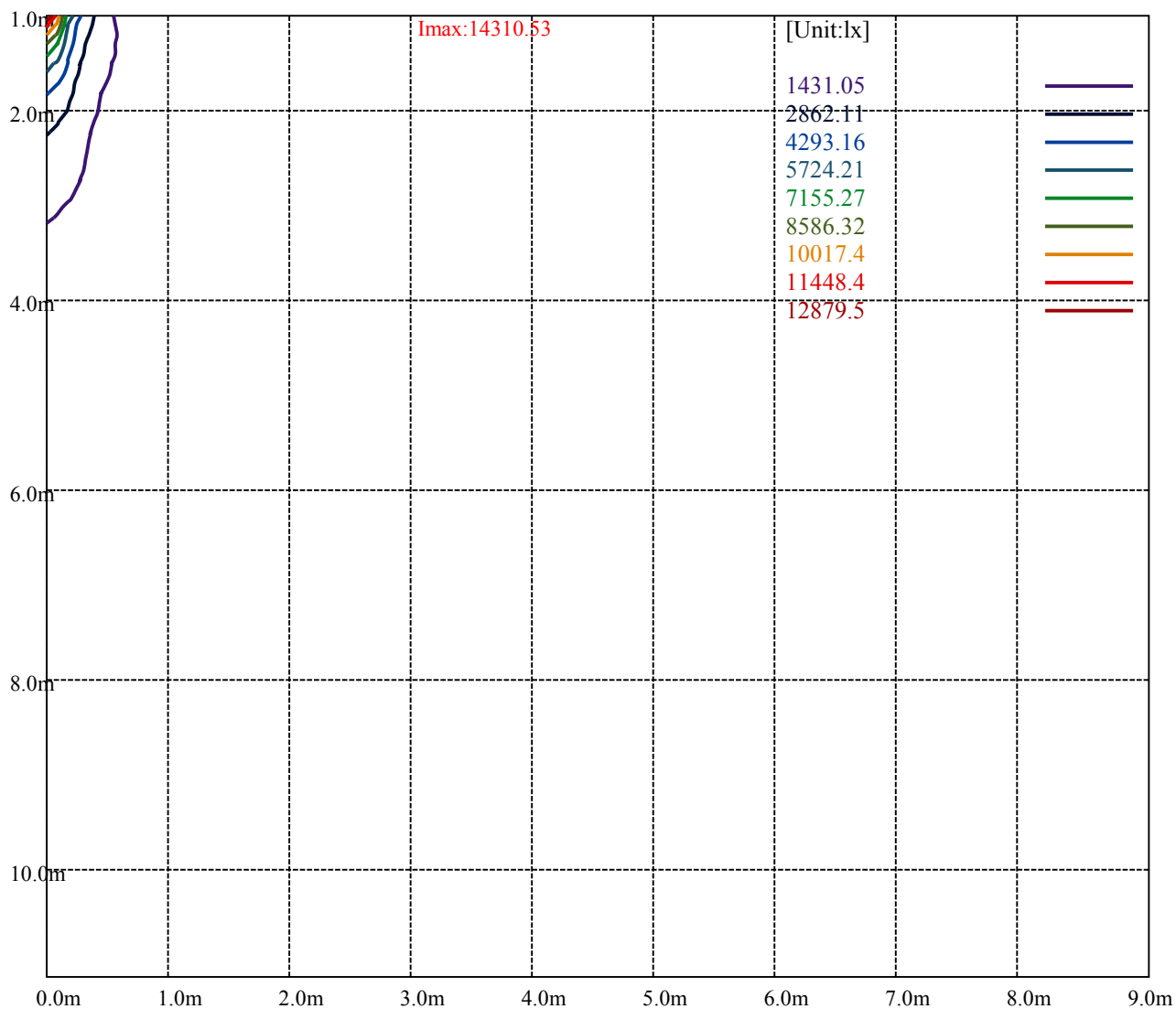
Road

Imax:14310.53

(10%Imax)	1431.05	—
(20%Imax)	2862.11	—
(30%Imax)	4293.16	—
(40%Imax)	5724.21	—
(50%Imax)	7155.27	—
(60%Imax)	8586.32	—
(70%Imax)	10017.4	—
(80%Imax)	11448.4	—
(90%Imax)	12879.5	—



(10%Emax)	159.0056	—
(20%Emax)	318.01	—
(30%Emax)	477.0156	—
(40%Emax)	636.02	—
(50%Emax)	795.0256	—
(60%Emax)	954.0311	—
(70%Emax)	1113.033	—
(80%Emax)	1272.044	—
(90%Emax)	1431.044	—



Luminance Table

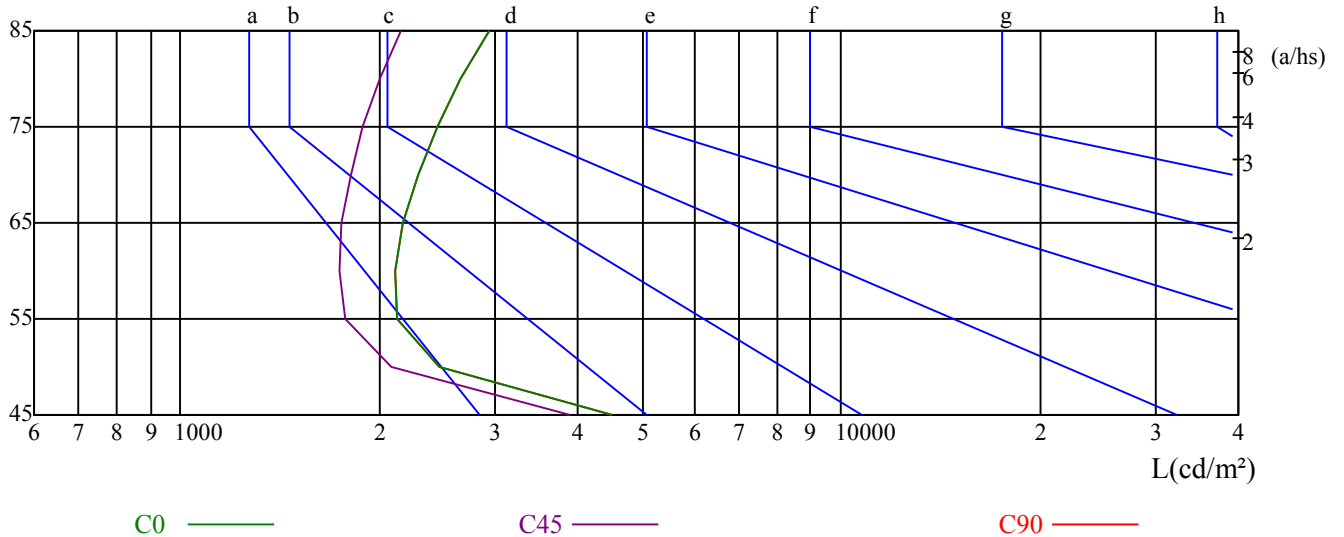
γ	45	50	55	60	65	70	75	80	85
C0	4517	2463	2131	2117	2177	2287	2445	2656	2939
C45	3883	2086	1776	1736	1754	1808	1890	2004	2153
C90	4517	2463	2131	2117	2177	2287	2445	2656	2939

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5211	5211	5211	8376	8376	8376	24771	24771	24771

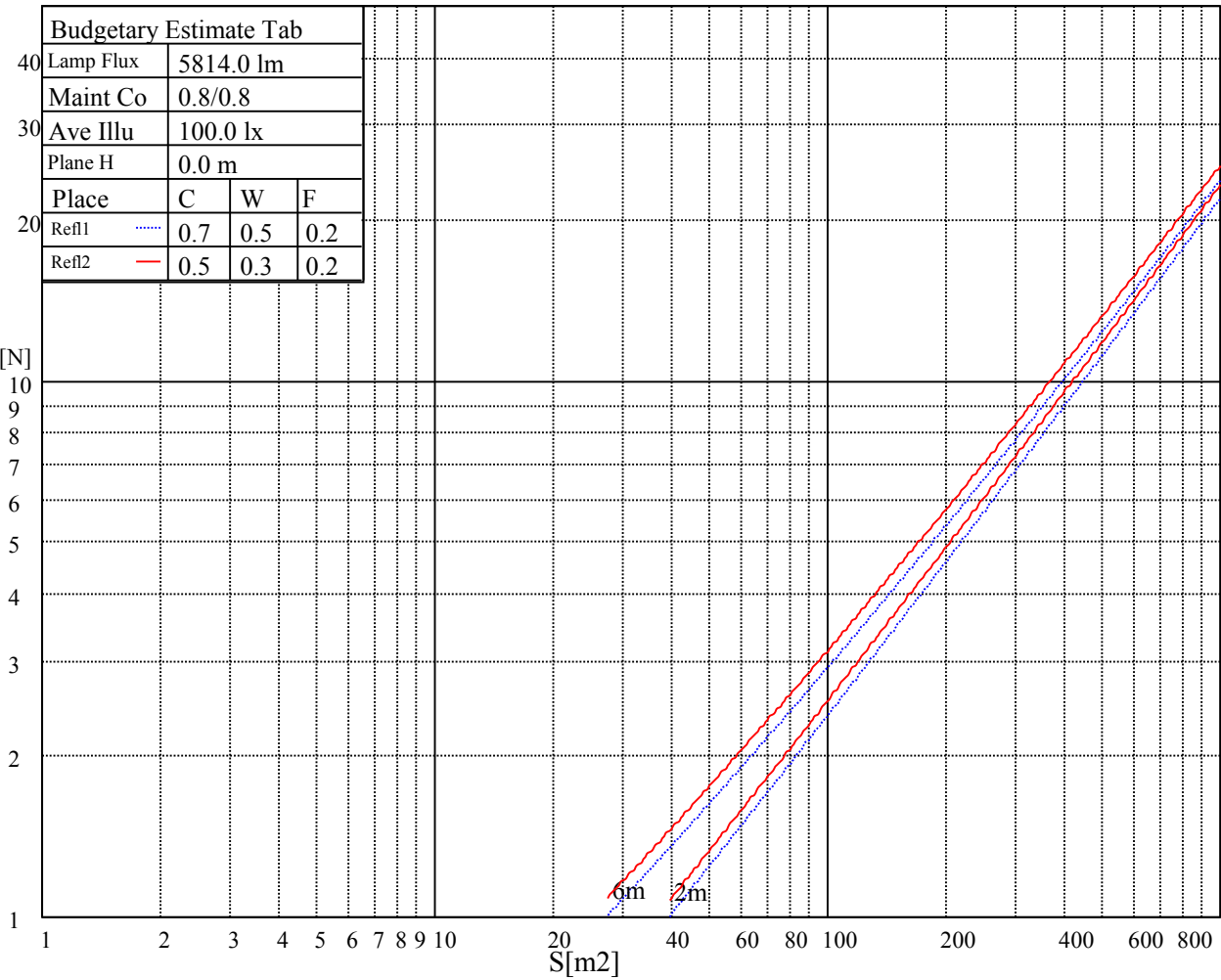
Glare Table

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

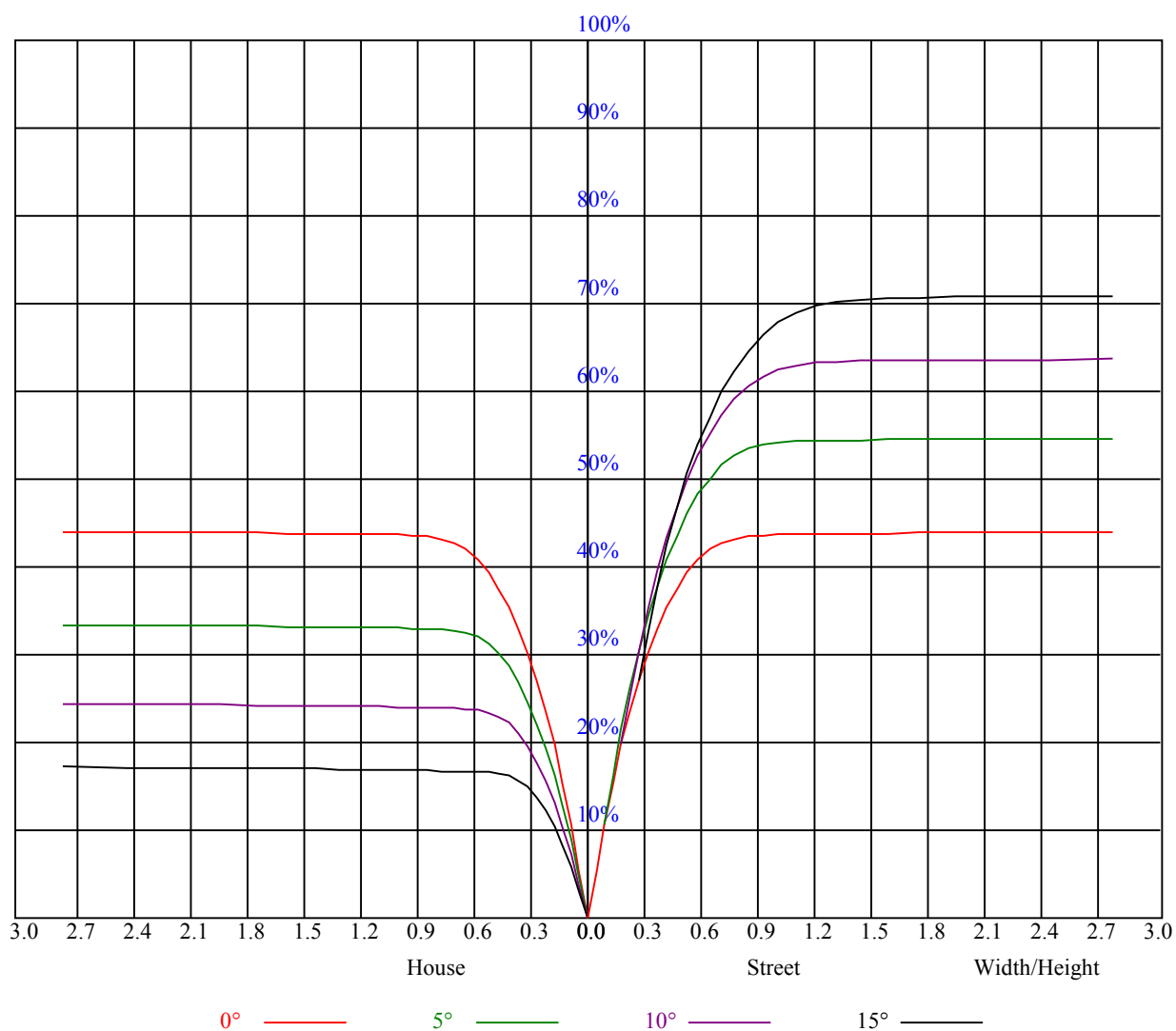
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

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	-2.09	-1.18	-1.73	-0.87	-0.55	-2.09	-1.18	-1.73	-0.87	-0.55
	3H	0.21	1.02	0.59	1.35	1.72	0.22	1.03	0.60	1.36	1.73
	4H	1.48	2.23	1.89	2.58	2.97	1.49	2.23	1.89	2.59	2.98
	6H	2.82	3.50	3.24	3.88	4.28	2.83	3.51	3.25	3.89	4.29
	8H	3.49	4.13	3.93	4.53	4.94	3.50	4.14	3.94	4.53	4.95
	12H	4.53	5.14	4.96	5.52	5.95	4.54	5.15	4.97	5.53	5.96
4H	2H	-1.60	-0.85	-1.19	-0.50	-0.10	-1.60	-0.85	-1.19	-0.50	-0.10
	3H	1.00	1.62	1.42	2.03	2.43	1.01	1.62	1.42	2.03	2.44
	4H	2.45	2.99	2.88	3.42	3.87	2.45	2.99	2.89	3.42	3.87
	6H	3.89	4.36	4.36	4.81	5.29	3.89	4.36	4.37	4.81	5.29
	8H	4.67	5.11	5.15	5.56	6.04	4.68	5.11	5.16	5.57	6.04
	12H	5.70	6.07	6.19	6.56	7.04	5.70	6.08	6.20	6.57	7.05
8H	4H	2.89	3.33	3.37	3.78	4.26	2.89	3.33	3.37	3.78	4.26
	6H	4.58	4.92	5.09	5.42	5.91	4.58	4.92	5.09	5.43	5.91
	8H	5.51	5.81	6.05	6.34	6.84	5.51	5.82	6.05	6.34	6.84
	12H	6.66	6.92	7.19	7.42	8.01	6.67	6.93	7.19	7.43	8.01
12H	4H	2.99	3.36	3.48	3.85	4.33	2.99	3.36	3.48	3.85	4.33
	6H	4.95	5.05	5.29	5.53	6.08	4.95	5.06	5.29	5.53	6.08
	8H	5.78	6.04	6.31	6.54	7.12	5.78	6.04	6.31	6.54	7.13
Variation with the observer position at spacings:											
S = 1.0H		5.9/-9.9					5.9/-9.9				
S = 1.5H		8.4/-7.9					8.4/-7.9				
S = 2.0H		10.2/-6.7					10.2/-6.7				
Standard tables:		BK1					BK1				
Uncorrected UGR		-0.7					-0.7				



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	1.07	1.07	1.07	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.90
1	0.98	0.96	0.93	0.96	0.94	0.92	0.92	0.91	0.89	0.89	0.88	0.86	0.86	0.85	0.84	0.82
2	0.92	0.89	0.86	0.91	0.88	0.85	0.88	0.85	0.83	0.85	0.83	0.81	0.83	0.81	0.80	0.78
3	0.87	0.83	0.80	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.74
4	0.83	0.79	0.75	0.82	0.78	0.75	0.80	0.77	0.74	0.78	0.75	0.73	0.77	0.74	0.72	0.71
5	0.79	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
6	0.75	0.71	0.67	0.75	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.65
7	0.72	0.67	0.64	0.72	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.63	0.69	0.65	0.63	0.62
8	0.69	0.64	0.61	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.59
9	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.58	0.64	0.61	0.58	0.64	0.60	0.58	0.57
10	0.64	0.59	0.56	0.63	0.59	0.56	0.63	0.59	0.56	0.62	0.59	0.56	0.61	0.58	0.56	0.55



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	14276.12	13042.86	8076.77	5516.65	4404.51	3578.67	2879.45	1618.66	442.65		
45.0	14347.70	12899.71	7773.96	5384.52	4376.98	3534.62	2813.38	1495.88	378.79		
90.0	14287.14	10965.03	6688.25	5042.62	4087.94	3316.05	2445.05	1061.71	211.42		
135.0	14331.18	12596.90	7416.10	5241.37	4283.39	3474.06	2813.38	1343.93	328.69		
180.0	14276.12	10918.79	6918.39	5111.44	4175.48	3358.44	2516.08	1015.96	218.63		
225.0	14347.70	10720.03	7268.00	5326.16	4263.02	3430.01	2566.18	1084.72	320.54		
270.0	14287.14	13197.02	8363.07	5676.31	4470.58	3589.68	2862.93	1730.42	548.91		
315.0	14331.18	10980.45	7468.40	5340.47	4305.96	3486.72	2745.11	1057.52	341.96		
360.0	14276.12	13042.86	8076.77	5516.65	4404.51	3578.67	2879.45	1618.66	442.65		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	55.72	29.35	23.78	22.57	22.02	21.80	21.69	21.69	21.64		
45.0	47.24	27.75	23.45	22.46	22.02	21.75	21.64	21.58	21.53		
90.0	41.73	25.33	23.18	22.35	21.91	21.75	21.64	21.58	21.58		
135.0	49.33	27.42	23.78	22.74	22.24	21.97	21.80	21.69	21.75		
180.0	45.81	25.60	23.34	22.46	22.02	21.80	21.69	21.64	21.58		
225.0	52.63	27.69	23.29	22.24	21.86	21.69	21.58	21.53	21.47		
270.0	75.15	32.98	23.84	22.57	22.02	21.80	21.69	21.58	21.58		
315.0	53.96	28.68	23.84	22.57	22.08	21.80	21.69	21.64	21.58		
360.0	55.72	29.35	23.78	22.57	22.02	21.80	21.69	21.69	21.64		
C/ γ (°)	90.0										
0.0	21.53										
45.0	21.47										
90.0	21.47										
135.0	21.53										
180.0	21.53										
225.0	21.47										
270.0	21.53										
315.0	21.53										
360.0	21.53										