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Nata

LumCAT: 2-1794-N	
Luminaire: 92.70.131.00	
Report No: NATA0100	Voltage(V): 34.7000
Test No: GC2018091003	Current(A): 0.5100
LampCAT: LUMINUS CXM-11-AC30	Power (W): 17.6970
Lamp flux(lm): 2546.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 69	Width(mm): 69
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2175.51
Efficiency(%): 85.45%
Lumens(lm)/Power(W): 125.48
Central intensity(cd): 7891.876
Maximum intensity(cd): 7891.876
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=25.8
[C90/270]Total=25.8
Field angle(10%Imax): [C0/180]Total=55.5
[C90/270]Total=55.5
Maximum s/h(1/2): C0_180=0.44 C90_270=0.44
Maximum s/h(1/4): C0_180=0.45 C90_270=0.45
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 87.22%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.258%

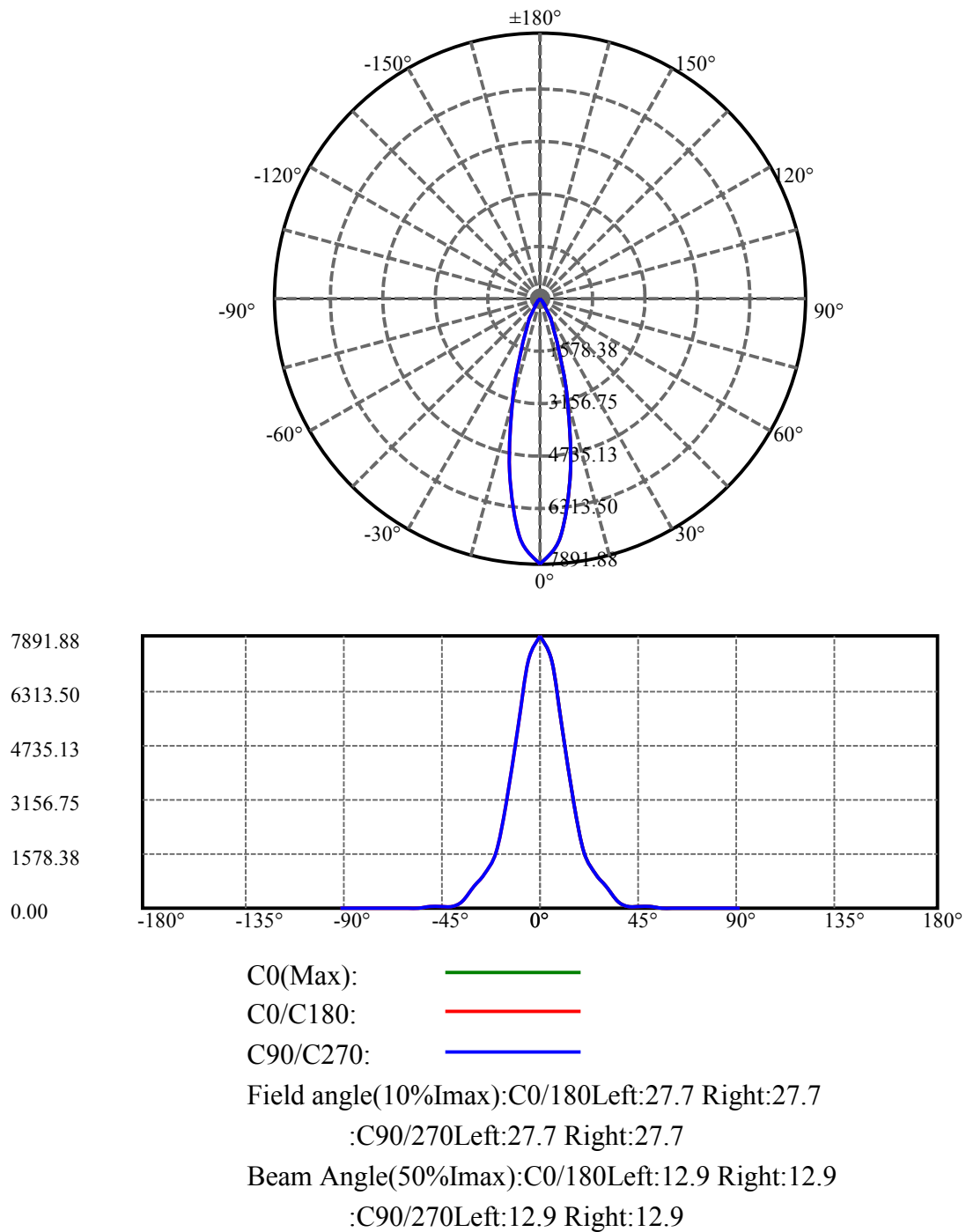
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7891.875	47.195	47.195	1.854%	2.169%
5.0	7137.844	340.999	388.193	13.393%	17.844%
10.0	5221.617	497.009	885.203	19.521%	40.689%
15.0	3026.180	429.319	1314.522	16.863%	60.424%
20.0	1617.188	303.181	1617.703	11.908%	74.360%
25.0	999.541	231.547	1849.25	9.095%	85.003%
30.0	616.570	168.983	2018.232	6.637%	92.771%
35.0	175.978	55.327	2073.559	2.173%	95.314%
40.0	52.144	18.372	2091.932	.722%	96.158%
45.0	36.506	14.150	2106.081	.556%	96.809%
50.0	28.111	11.804	2117.885	.464%	97.351%
55.0	23.133	10.387	2128.272	.408%	97.829%
60.0	19.540	9.276	2137.547	.364%	98.255%
65.0	16.573	8.233	2145.78	.323%	98.634%
70.0	14.766	7.605	2153.386	.299%	98.983%
75.0	13.240	7.010	2160.396	.275%	99.305%
80.0	11.981	6.468	2166.863	.254%	99.603%
85.0	10.849	5.924	2172.787	.233%	99.875%
90.0	9.928	2.721	2175.508	.107%	100.000%

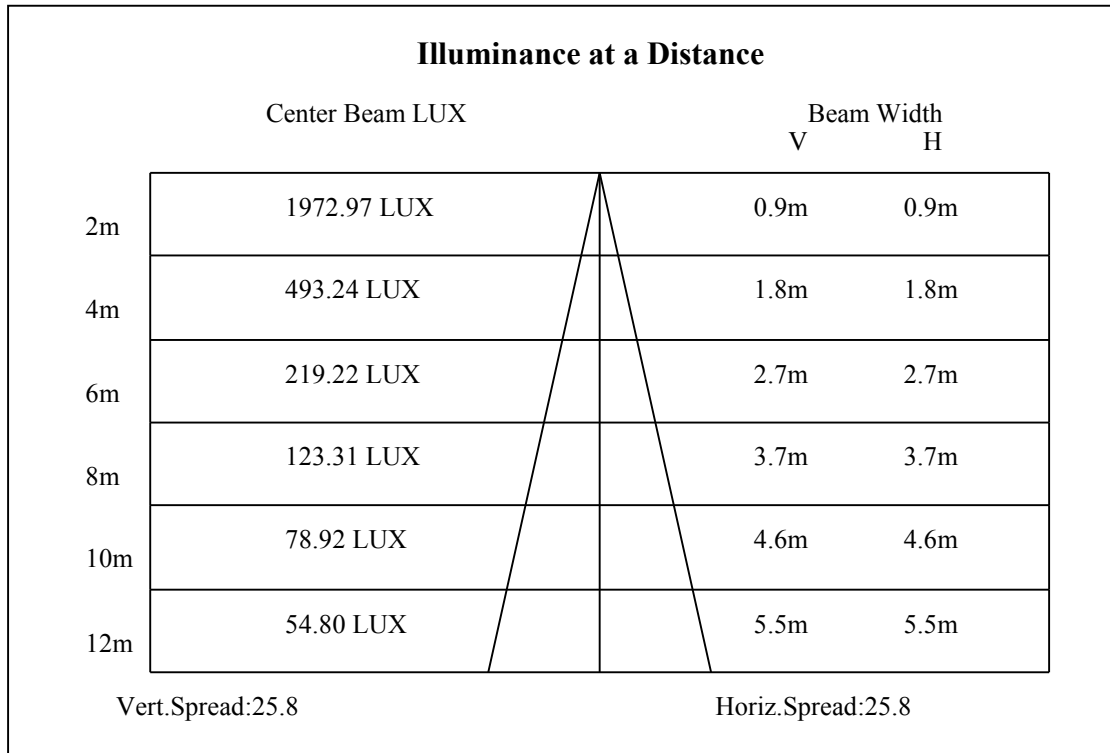
ZONAL LUMEN SUMMARY

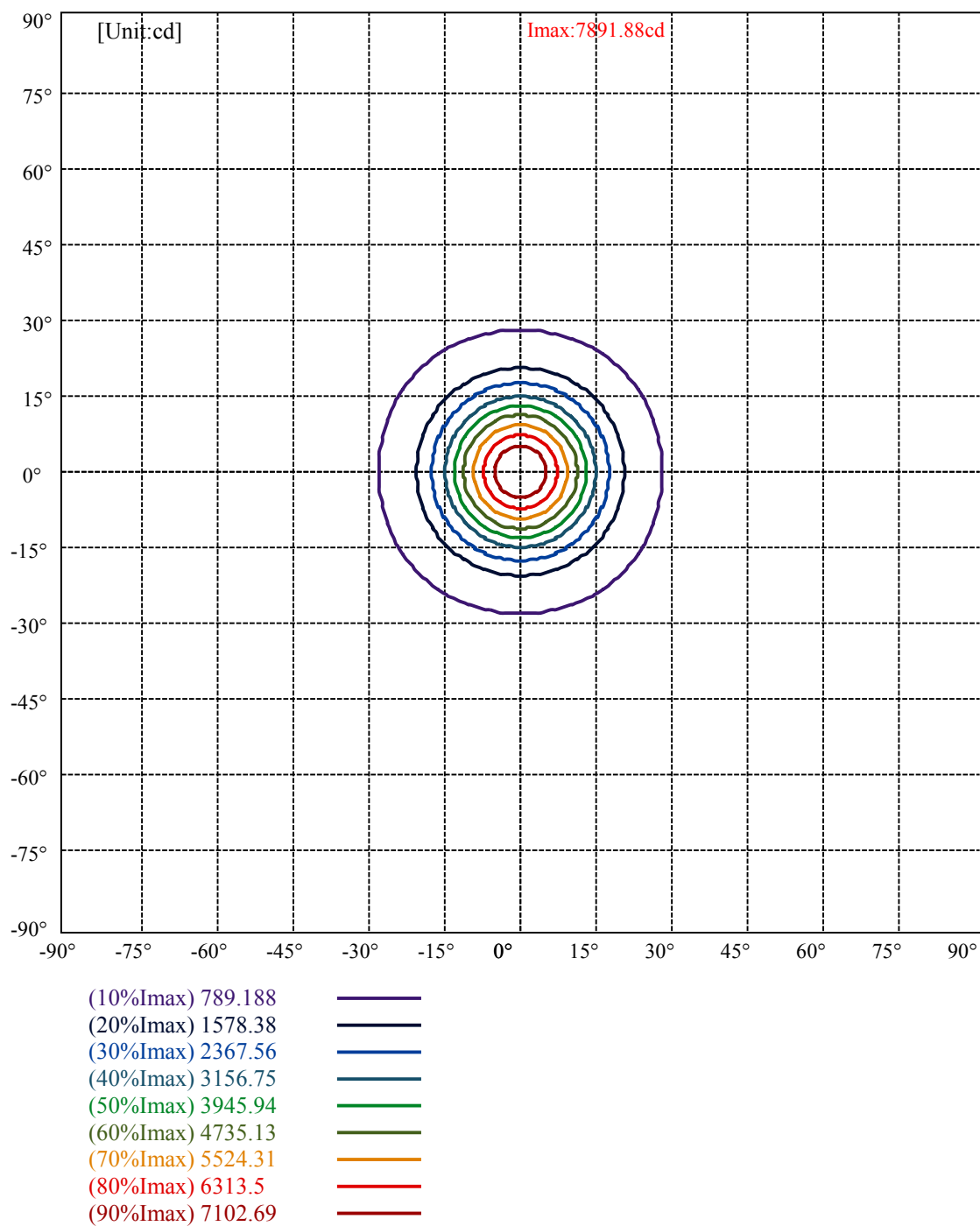
Zone	Lumens	%Lamp	%Fixt
0-30	2018.23	79.27%	92.77%
0-40	2091.93	82.17%	96.16%
0-60	2137.55	83.96%	98.26%
0-90	2172.79	85.34%	99.87%
0-120	2172.79	85.34%	99.87%
0-180	2175.51	85.45%	100.00%
60-90	44.52	1.75%	2.05%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-22.65	1740.41	68.36%	80.00%

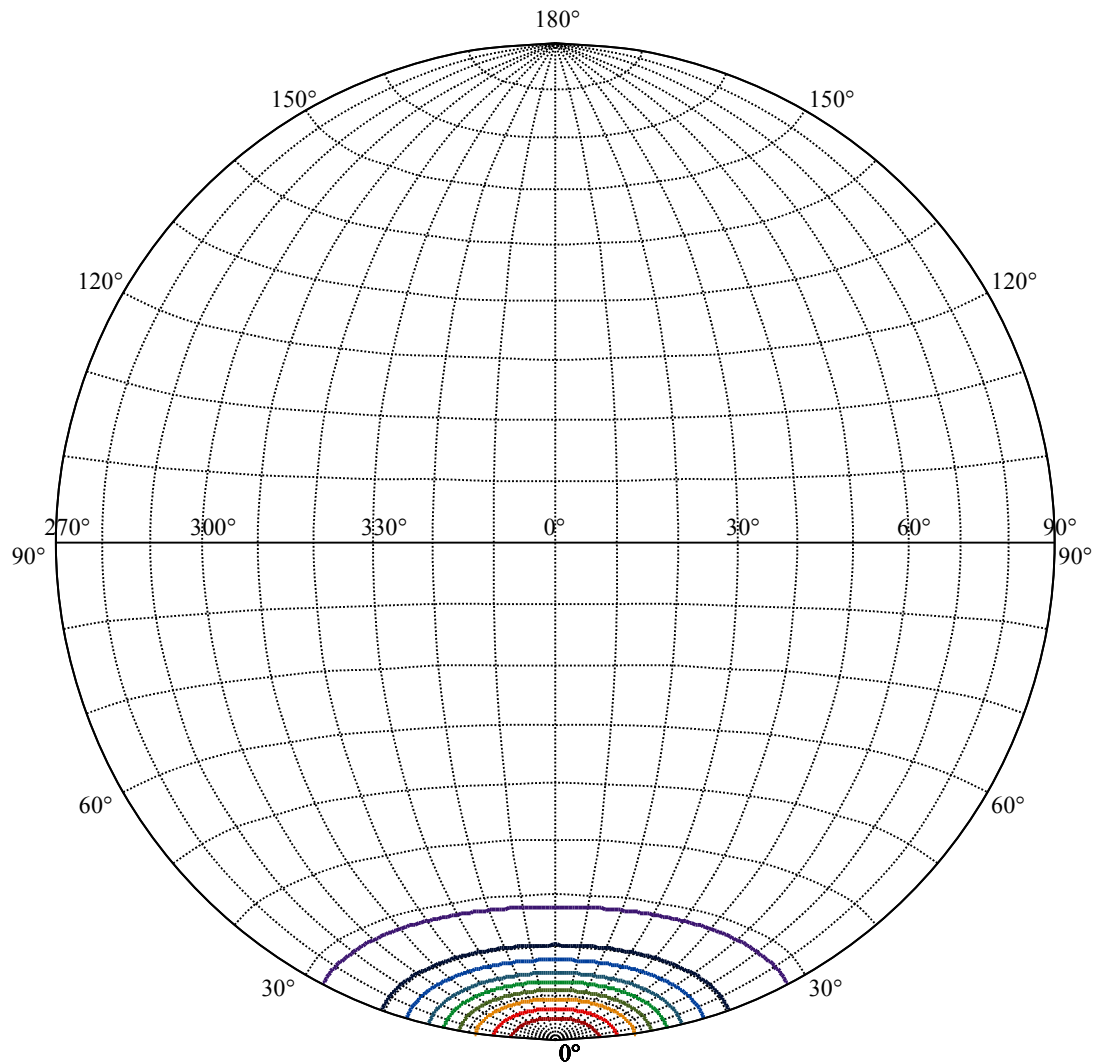
ZONAL LUMEN SUMMARY

0-10	885.20
10-20	732.50
20-30	400.53
30-40	73.70
40-50	25.95
50-60	19.66
60-70	15.84
70-80	13.48
80-90	5.92
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









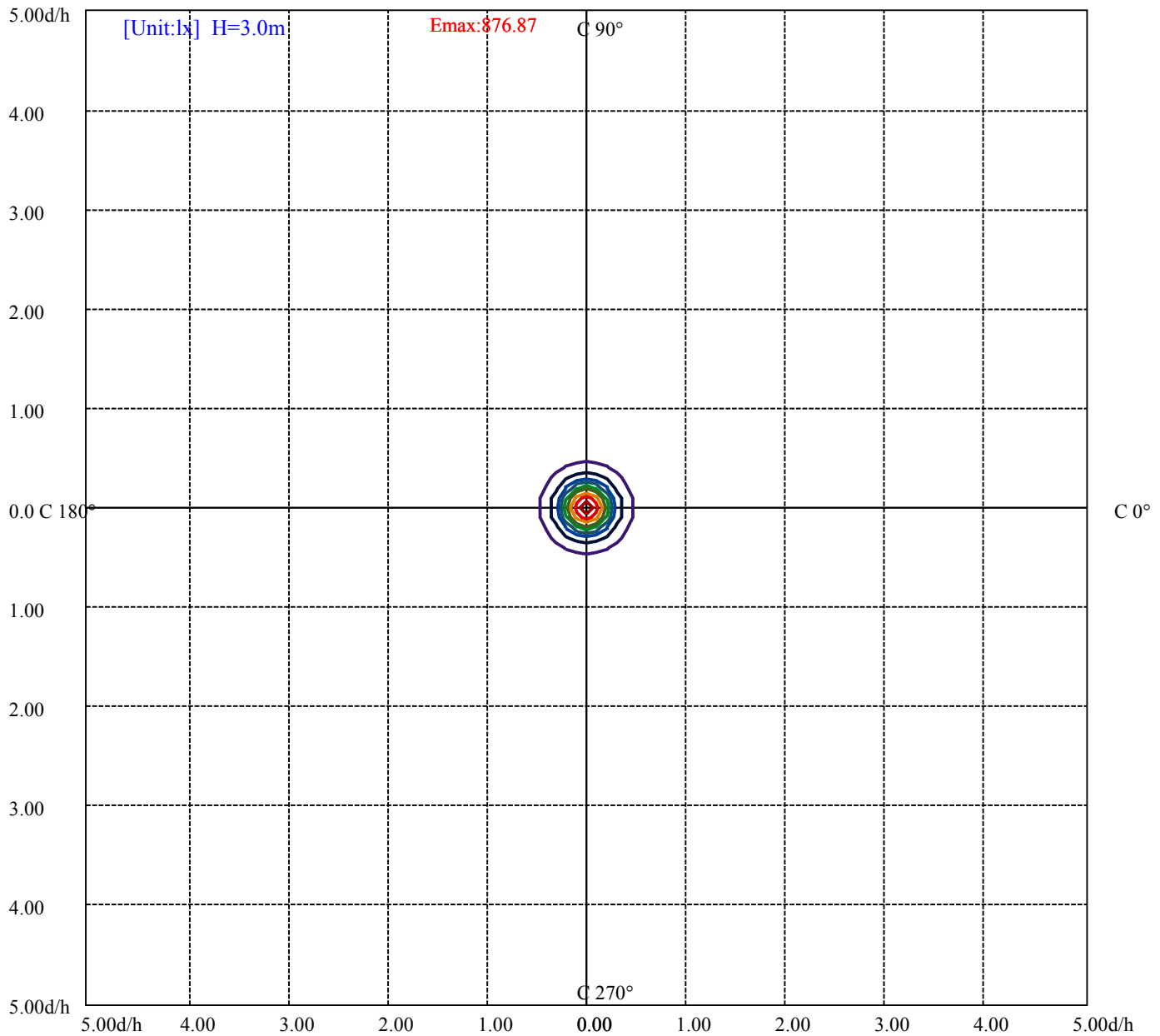
House

[Unit:cd]

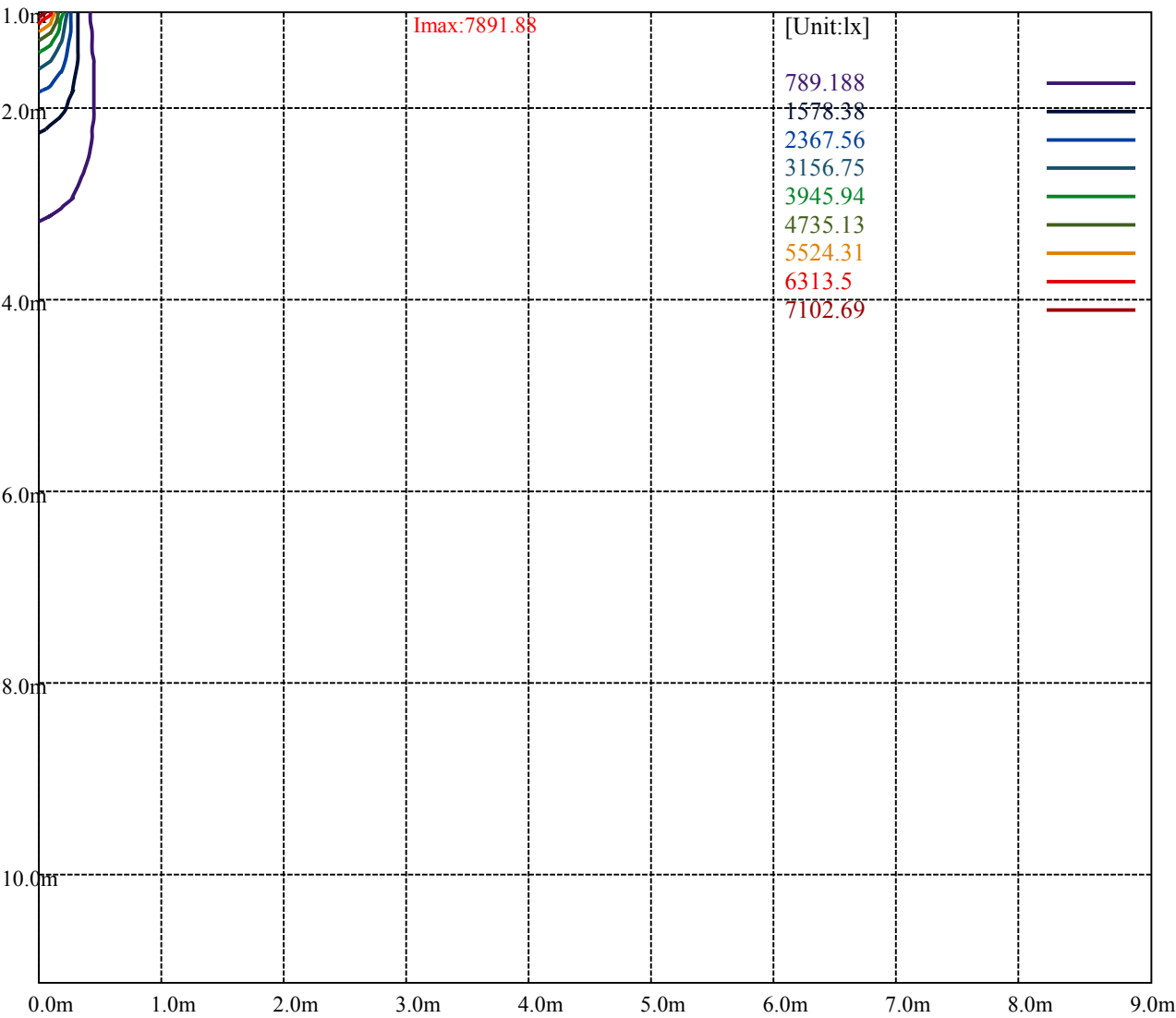
Road

Imax:7891.88

(10%Imax)	789.188	—
(20%Imax)	1578.38	—
(30%Imax)	2367.56	—
(40%Imax)	3156.75	—
(50%Imax)	3945.94	—
(60%Imax)	4735.13	—
(70%Imax)	5524.31	—
(80%Imax)	6313.5	—
(90%Imax)	7102.69	—



(10%Emax)	87.68723	—
(20%Emax)	175.3745	—
(30%Emax)	263.0622	—
(40%Emax)	350.7489	—
(50%Emax)	438.4366	—
(60%Emax)	526.1233	—
(70%Emax)	613.8111	—
(80%Emax)	701.4978	—
(90%Emax)	789.1855	—



Luminance Table

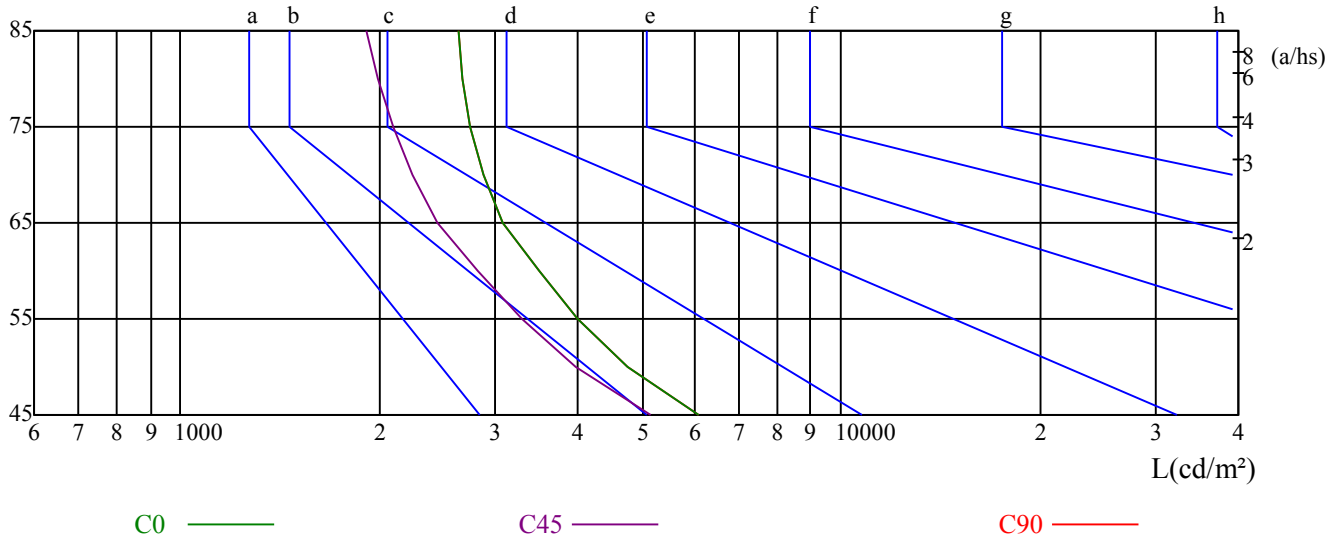
γ	45	50	55	60	65	70	75	80	85
C0	6083	4753	4000	3485	3075	2878	2740	2665	2629
C45	5147	3961	3283	2814	2442	2244	2094	1992	1915
C90	6083	4753	4000	3485	3075	2878	2740	2665	2629

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
8237	8237	8237	10745	10745	10745	26146	26146	26146

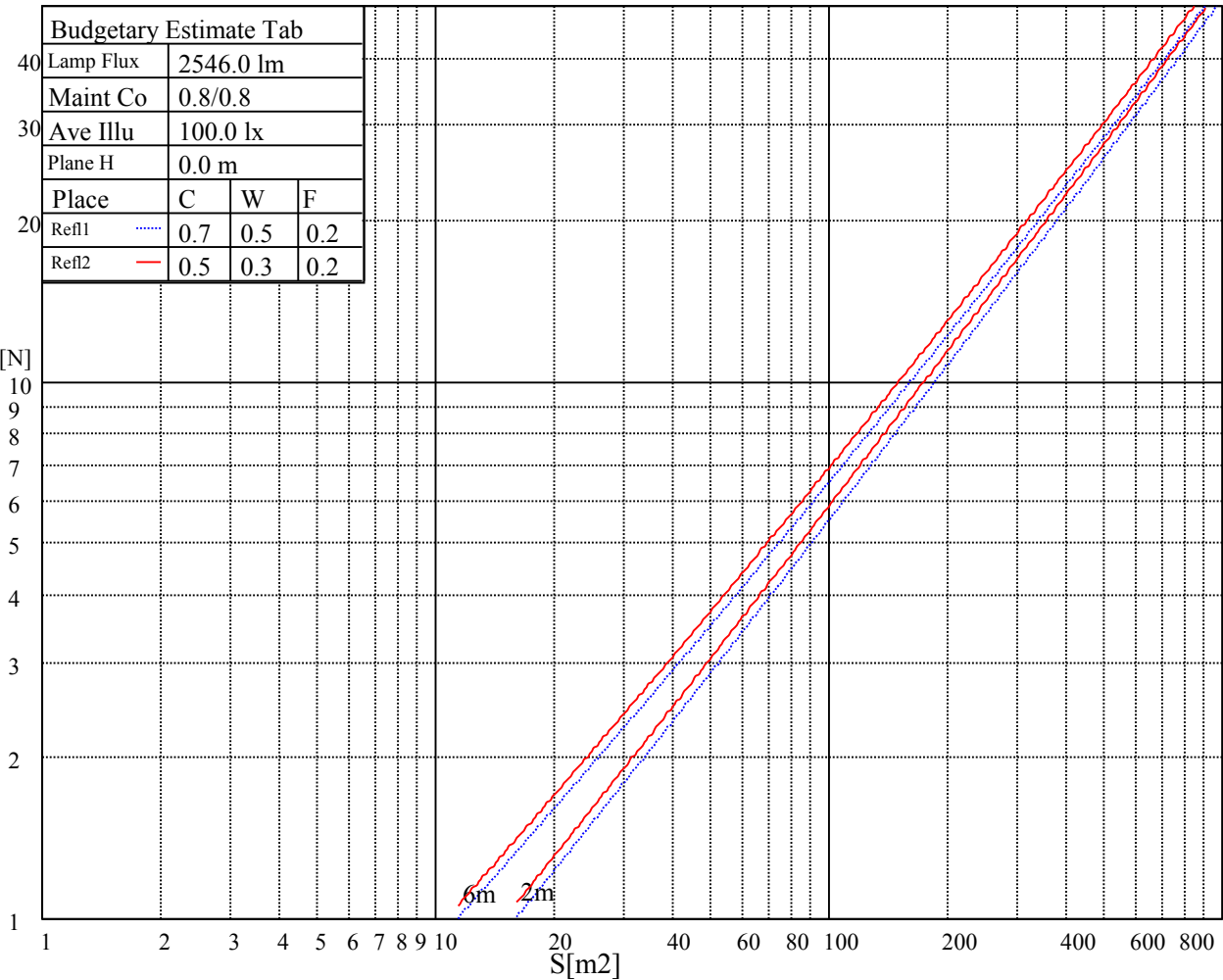
Glare Table

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

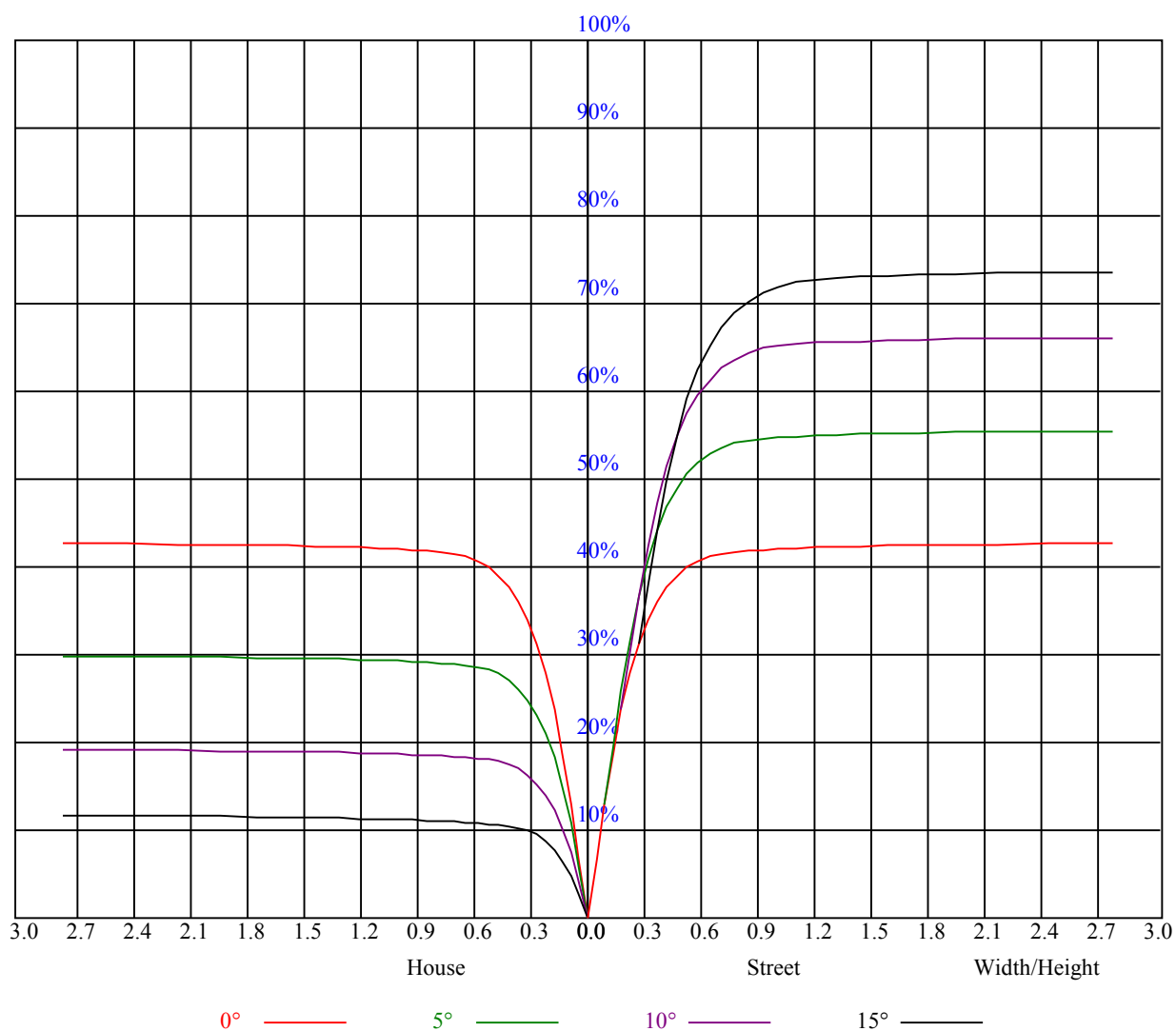
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

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	5.39	6.33	5.75	6.64	6.96	5.69	6.64	6.06	6.95	7.26
	3H	6.79	7.63	7.18	7.96	8.33	7.11	7.94	7.49	8.27	8.64
	4H	7.53	8.31	7.94	8.66	9.05	7.84	8.61	8.25	8.97	9.36
	6H	8.30	9.01	8.72	9.39	9.78	8.61	9.31	9.02	9.69	10.08
	8H	8.68	9.34	9.12	9.74	10.15	8.98	9.64	9.42	10.04	10.45
	12H	9.28	9.92	9.72	10.30	10.73	9.58	10.22	10.02	10.60	11.03
4H	2H	5.64	6.41	6.04	6.76	7.15	5.90	6.67	6.31	7.02	7.41
	3H	7.31	7.95	7.73	8.36	8.76	7.58	8.21	7.99	8.62	9.03
	4H	8.22	8.79	8.66	9.21	9.66	8.48	9.04	8.92	9.47	9.92
	6H	9.07	9.55	9.54	10.00	10.48	9.32	9.81	9.79	10.26	10.73
	8H	9.55	10.01	10.03	10.46	10.93	9.81	10.26	10.28	10.71	11.18
	12H	10.20	10.59	10.70	11.08	11.56	10.46	10.85	10.95	11.34	11.82
8H	4H	8.48	8.93	8.96	9.38	9.86	8.71	9.16	9.19	9.61	10.09
	6H	9.54	9.90	10.05	10.40	10.89	9.76	10.12	10.27	10.62	11.11
	8H	10.16	10.48	10.70	11.00	11.50	10.38	10.70	10.92	11.22	11.72
	12H	10.99	11.26	11.51	11.76	12.34	11.21	11.48	11.74	11.98	12.56
12H	4H	8.52	8.90	9.01	9.39	9.87	8.73	9.12	9.23	9.61	10.09
	6H	9.88	9.96	10.18	10.43	10.98	10.08	10.17	10.39	10.64	11.19
	8H	10.35	10.62	10.87	11.12	11.70	10.55	10.83	11.08	11.33	11.91
Variation with the observer position at spacings:											
S = 1.0H		4.5/-2.6					4.5/-2.6				
S = 1.5H		6.2/-2.2					6.2/-2.2				
S = 2.0H		7.4/-1.9					7.4/-1.9				
Standard tables:		BK3					BK3				
Uncorrected UGR		-4.0					-4.0				



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



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	7847.44	7419.94	5891.63	3554.44	1886.06	1097.44	775.13	311.63	57.66		
45.0	7908.75	7234.88	5523.75	3191.06	1695.94	1045.13	681.19	294.75	53.21		
90.0	7904.25	6950.25	4757.06	2611.69	1284.75	865.80	432.17	84.38	49.89		
135.0	7907.06	7116.19	5227.88	3088.69	1636.88	1006.88	641.81	164.03	52.59		
180.0	7847.44	6827.63	4798.13	2692.69	1445.06	953.16	535.28	73.86	48.60		
225.0	7908.75	7038.56	4861.69	2869.31	1548.56	969.75	577.63	82.13	49.16		
270.0	7904.25	7308.00	5475.38	3211.88	1779.75	1041.75	666.00	295.88	53.61		
315.0	7907.06	7207.31	5237.44	2989.69	1660.50	1016.44	623.36	101.19	52.43		
360.0	7847.44	7419.94	5891.63	3554.44	1886.06	1097.44	775.13	311.63	57.66		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	40.44	30.60	24.92	21.04	17.78	15.75	14.01	12.71	11.36		
45.0	36.56	27.90	23.06	19.41	16.37	14.51	13.16	11.87	10.74		
90.0	34.59	26.94	22.05	18.51	15.92	14.18	12.77	11.53	10.41		
135.0	36.56	28.46	23.23	19.46	16.54	14.68	13.11	11.87	10.74		
180.0	35.55	28.01	23.29	19.74	16.76	14.91	13.33	12.04	10.97		
225.0	35.16	27.00	22.50	19.13	16.20	14.46	12.94	11.76	10.80		
270.0	36.90	28.18	22.78	19.41	16.37	14.74	13.28	12.09	10.91		
315.0	36.28	27.79	23.23	19.63	16.65	14.91	13.33	11.98	10.86		
360.0	40.44	30.60	24.92	21.04	17.78	15.75	14.01	12.71	11.36		
C/γ(°)	90.0										
0.0	10.18										
45.0	9.90										
90.0	9.84										
135.0	9.84										
180.0	9.84										
225.0	10.01										
270.0	9.90										
315.0	9.90										
360.0	10.18										