
Nata

Client:

LumCAT: 1653-S

Luminaire: 92.70.046.00

Report No: NT2018040601

Test No: nata-0100

LampCAT: CREE CXA1512

Lamp flux(lm): 1248.2

Number of Lamps: 1

Length(mm): 32

Phm Type: C

Voltage(V): 35.5000

Current(A): 0.3500

Power (W): 12.4250

PF: 0.0000

Ballast type: DC

Width(mm): 32

Height(mm): 0

Photometric Results

Lumens(lm): 1101.18, Efficiency(%): 88.22% , Luminous Efficacy(lm/W): 88.63

Central intensity(cd): 4476.223, Maximum intensity(cd): 4476.223

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=23.2

[C90/270]Total=23.2

Field angle(10%Imax): [C0/180]Total=54.4

[C90/270]Total=54.4

Maximum s/h(1/2): C0_180=0.40 C90_270=0.40

Maximum s/h(1/4): C0_180=0.38 C90_270=0.38

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 90.28%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.147%

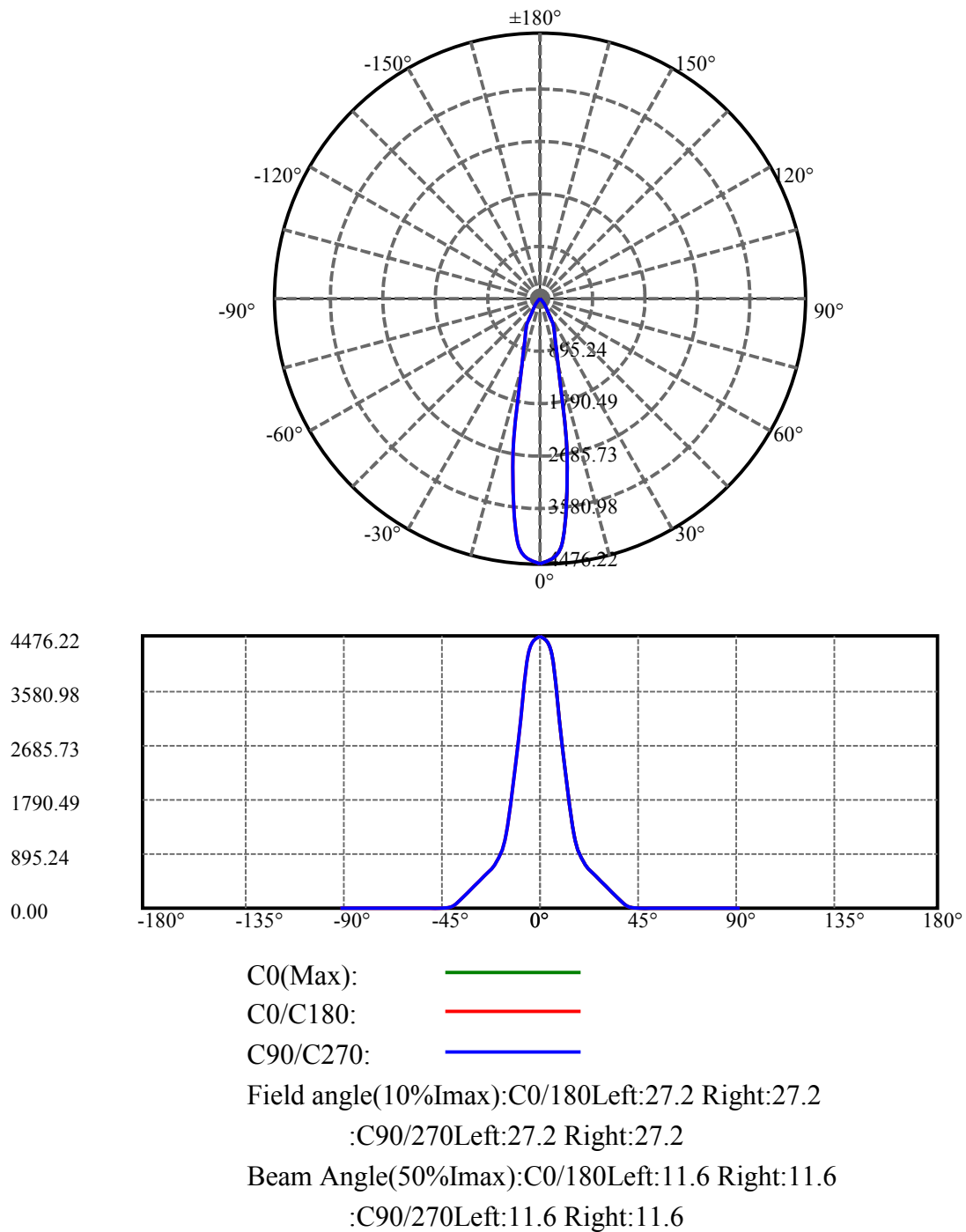
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4476.223	26.769	26.769	2.145%	2.431%
5.0	4160.406	198.756	225.525	15.923%	20.480%
10.0	2706.779	257.640	483.165	20.640%	43.877%
15.0	1229.740	174.461	657.626	13.977%	59.720%
20.0	743.619	139.409	797.035	11.169%	72.380%
25.0	516.993	119.763	916.798	9.595%	83.256%
30.0	358.252	98.186	1014.984	7.866%	92.173%
35.0	154.743	48.651	1063.635	3.898%	96.591%
40.0	25.119	8.850	1072.485	.709%	97.394%
45.0	7.316	2.835	1075.321	.227%	97.652%
50.0	6.235	2.618	1077.939	.210%	97.890%
55.0	6.022	2.704	1080.643	.217%	98.135%
60.0	5.967	2.832	1083.475	.227%	98.392%
65.0	5.981	2.971	1086.446	.238%	98.662%
70.0	5.987	3.084	1089.53	.247%	98.942%
75.0	6.008	3.181	1092.711	.255%	99.231%
80.0	7.281	3.930	1096.642	.315%	99.588%
85.0	5.932	3.239	1099.881	.260%	99.882%
90.0	4.728	1.296	1101.177	.104%	100.000%

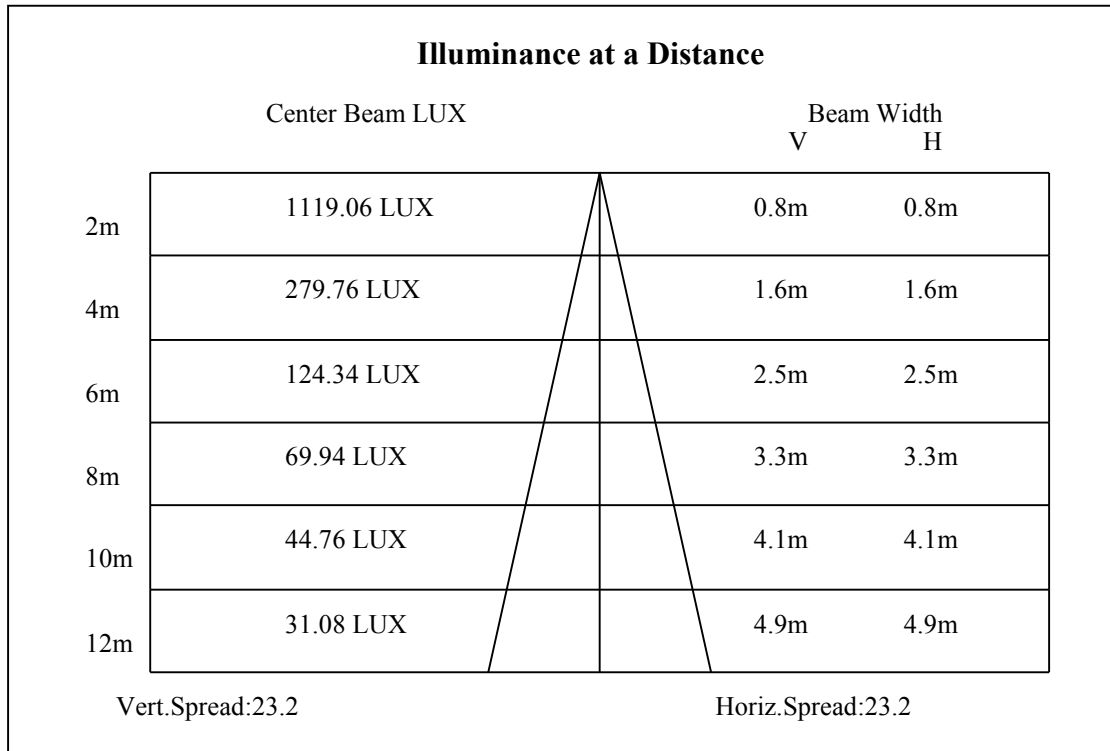
ZONAL LUMEN SUMMARY

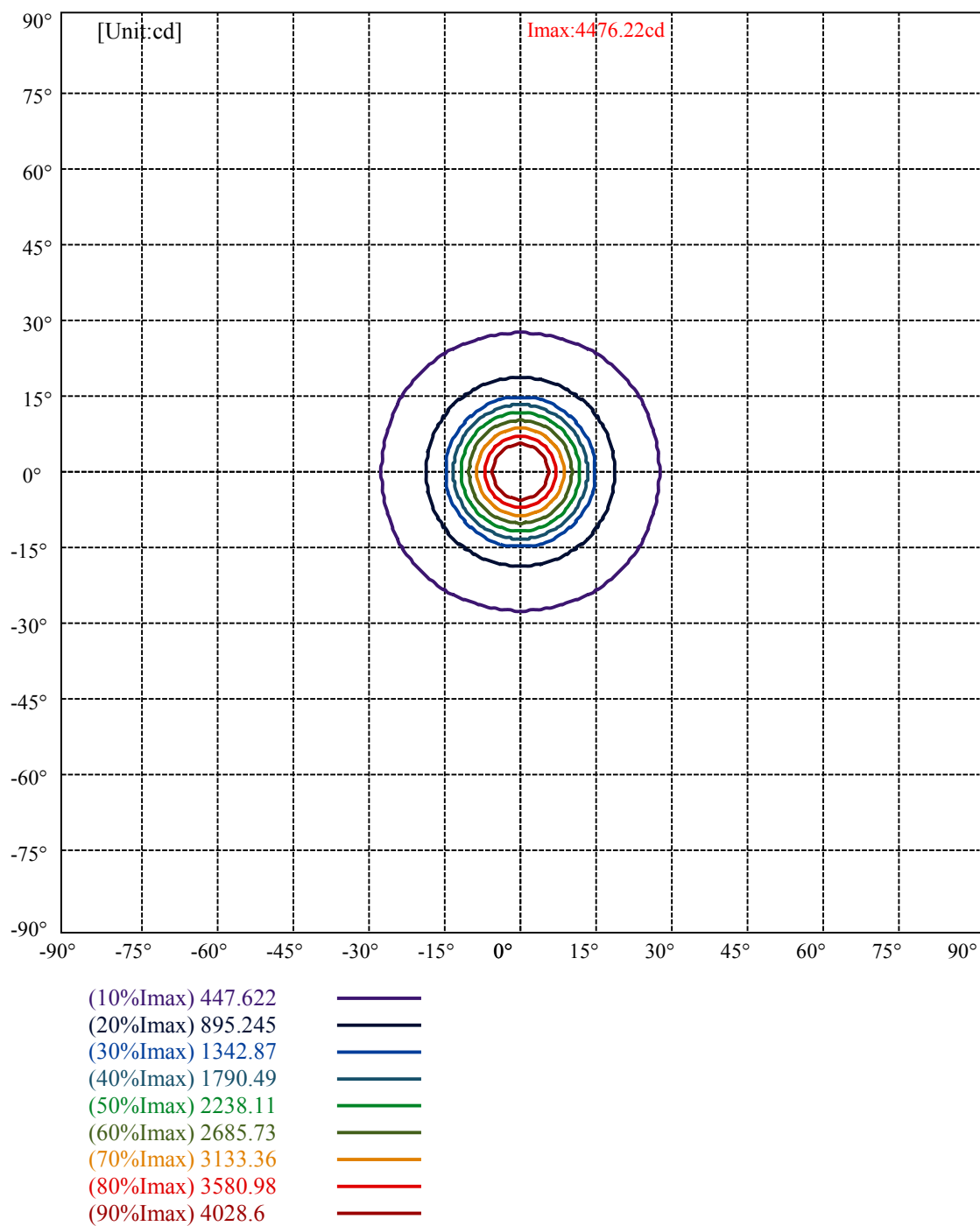
Zone	Lumens	%Lamp	%Fixt
0-30	1014.98	81.31%	92.17%
0-40	1072.49	85.92%	97.39%
0-60	1083.48	86.80%	98.39%
0-90	1099.88	88.12%	99.88%
0-120	1099.88	88.12%	99.88%
0-180	1101.18	88.22%	100.00%
60-90	19.24	1.54%	1.75%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-23.50	880.94	70.58%	80.00%

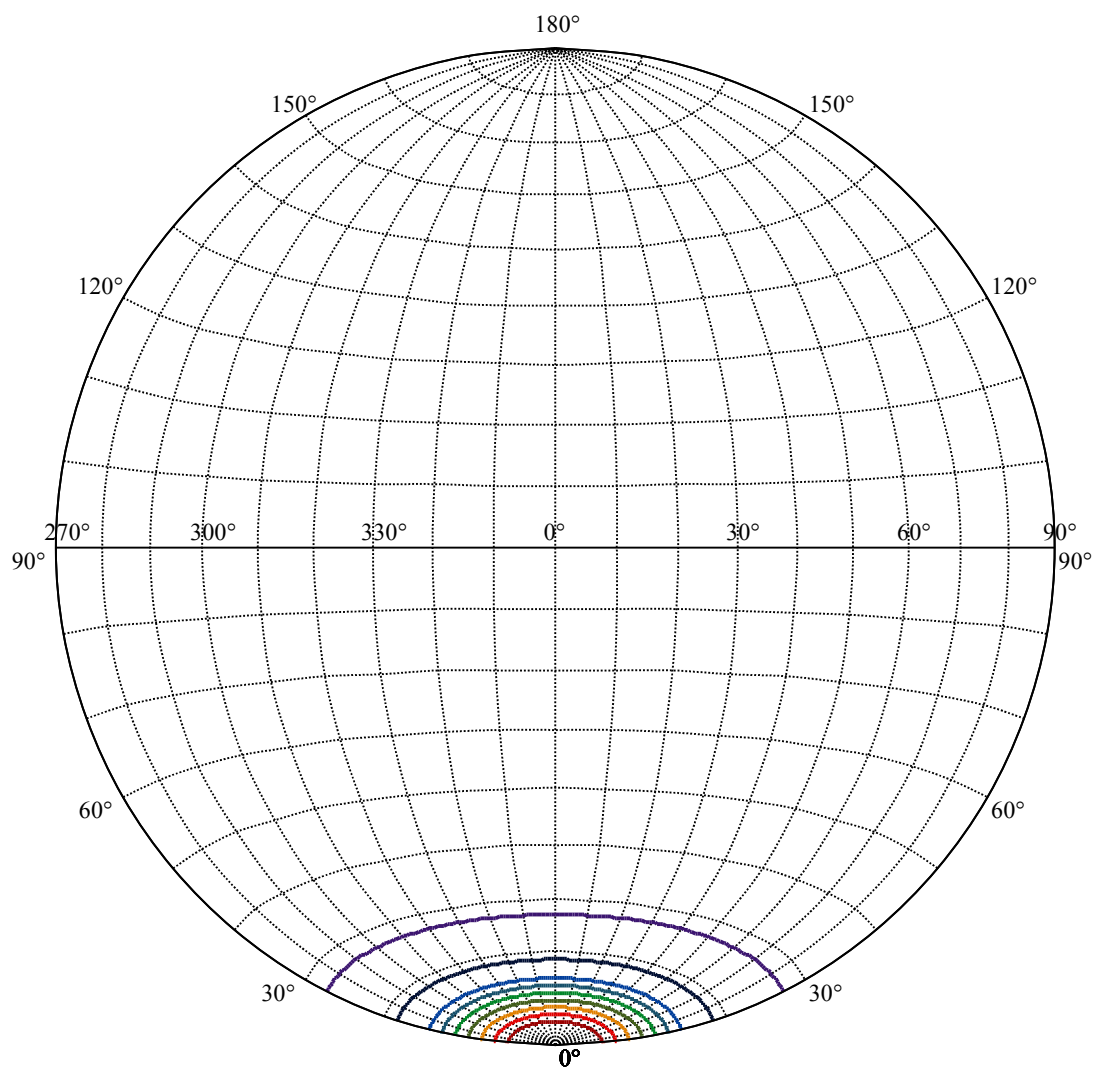
ZONAL LUMEN SUMMARY

0-10	483.16
10-20	313.87
20-30	217.95
30-40	57.50
40-50	5.45
50-60	5.54
60-70	6.05
70-80	7.11
80-90	3.24
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









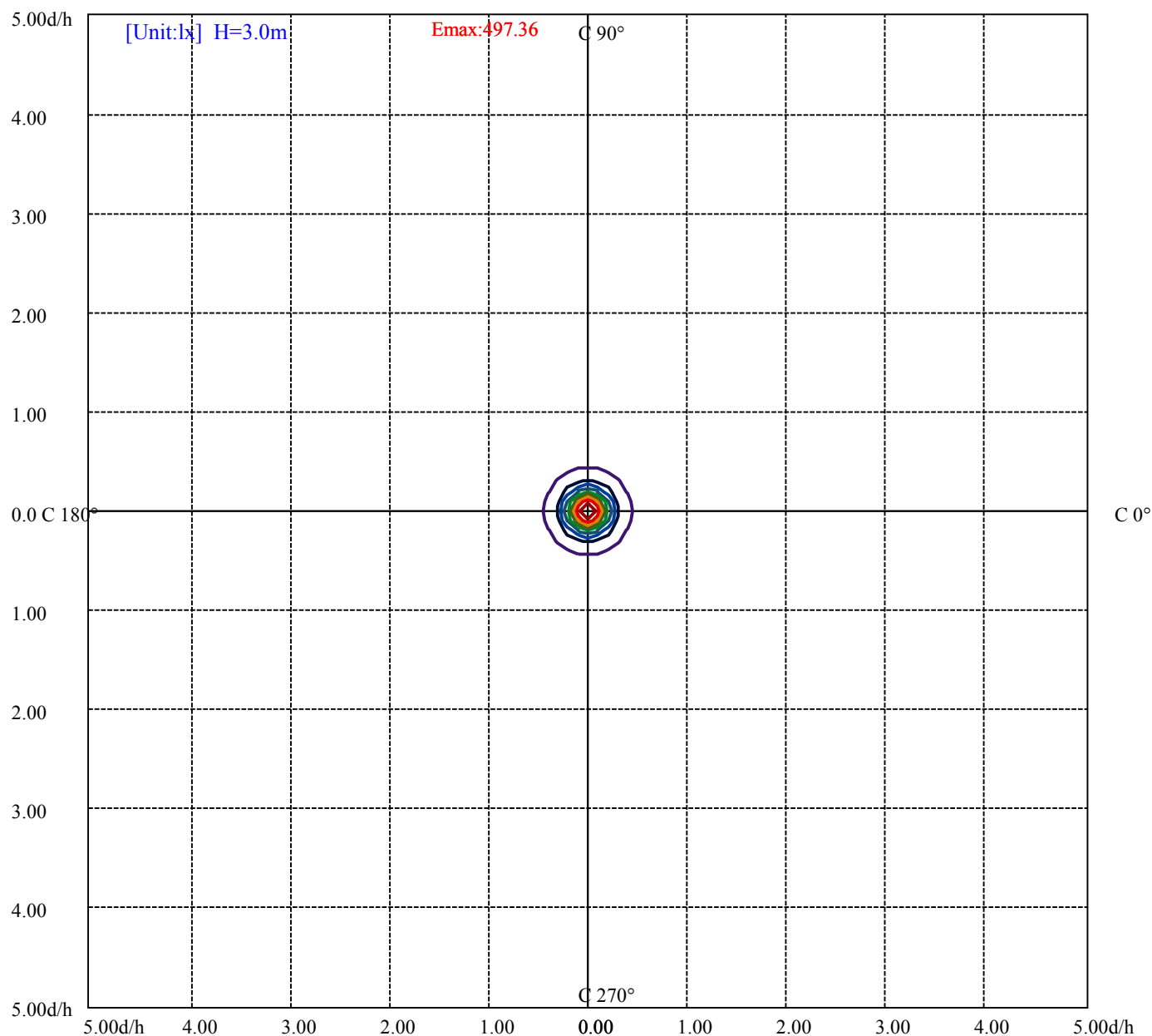
House

[Unit:cd]

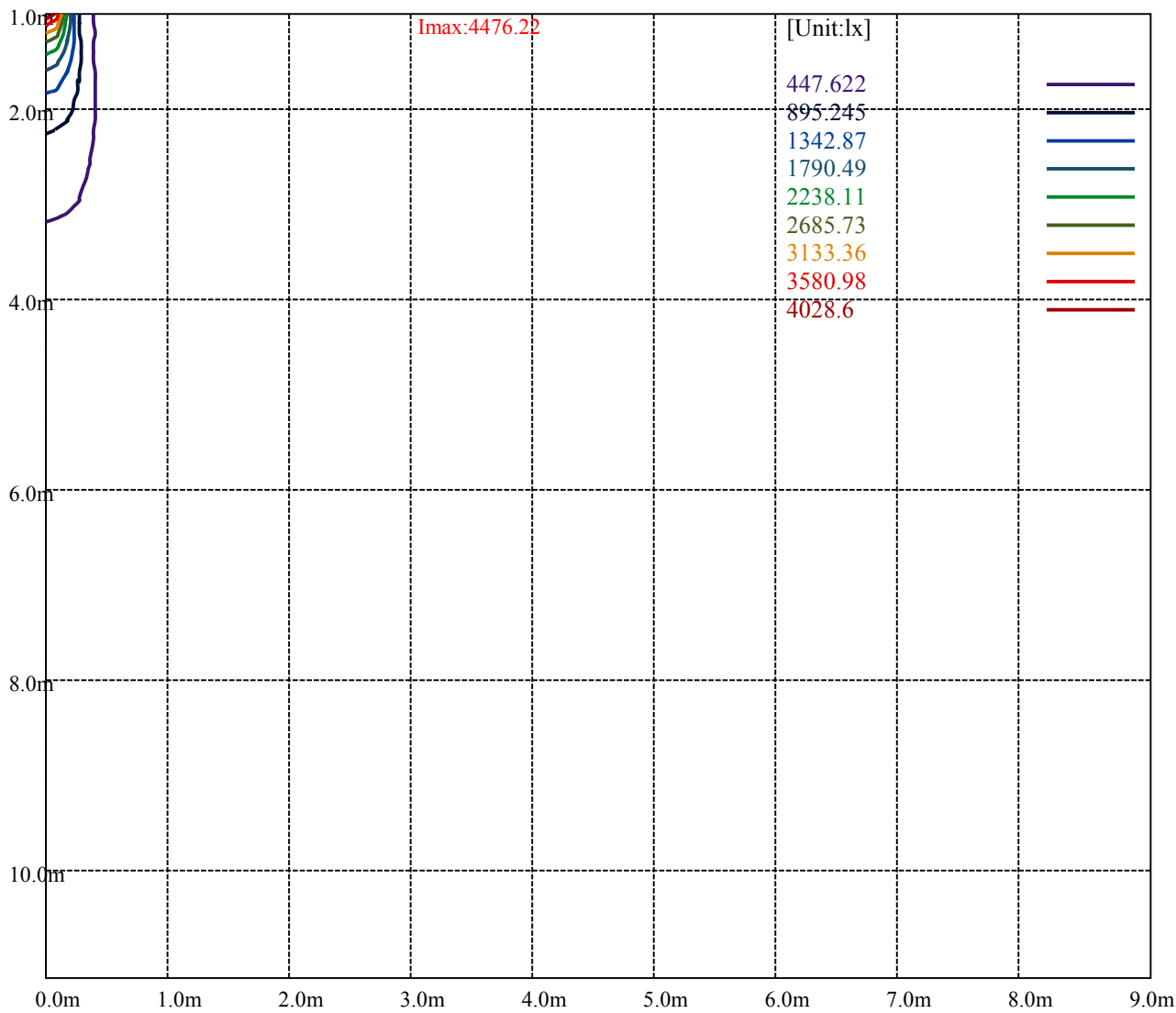
Road

Imax:4476.22

(10%Imax)	447.622	
(20%Imax)	895.245	
(30%Imax)	1342.87	
(40%Imax)	1790.49	
(50%Imax)	2238.11	
(60%Imax)	2685.73	
(70%Imax)	3133.36	
(80%Imax)	3580.98	
(90%Imax)	4028.6	



(10%Emax)	49.73567	—
(20%Emax)	99.47144	—
(30%Emax)	149.2067	—
(40%Emax)	198.9433	—
(50%Emax)	248.6789	—
(60%Emax)	298.4144	—
(70%Emax)	348.15	—
(80%Emax)	397.8856	—
(90%Emax)	447.6211	—



Luminance Table

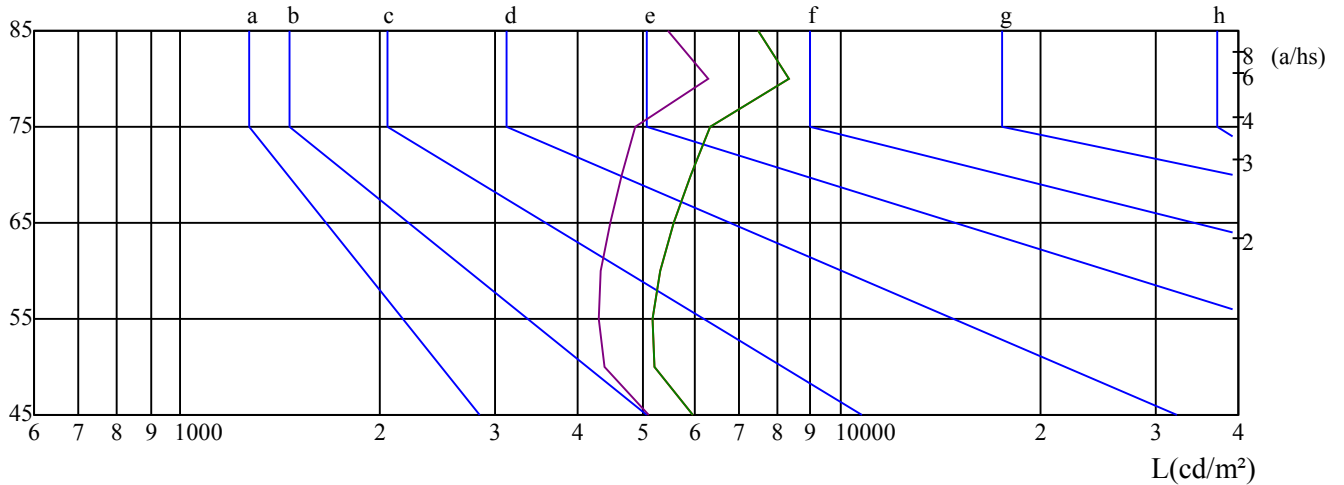
γ	45	50	55	60	65	70	75	80	85
C0	5987	5207	5173	5319	5585	5918	6357	8358	7504
C45	5123	4388	4292	4342	4479	4657	4898	6286	5487
C90	5987	5207	5173	5319	5585	5918	6357	8358	7504

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
13819	13819	13819	22669	22669	22669	66471	66471	66471

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

 $\gamma(^{\circ})$ 

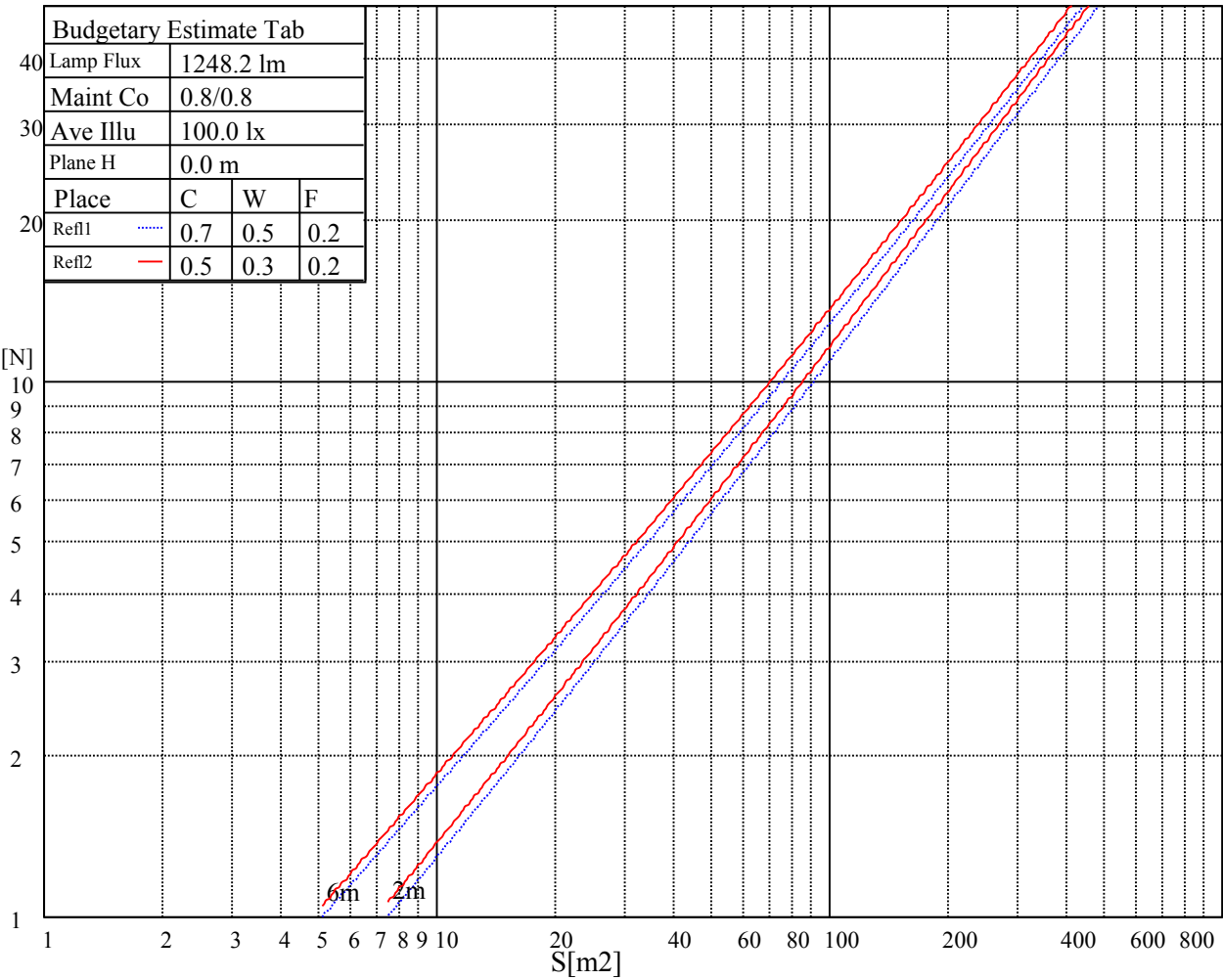
C0 ———

C45 ———

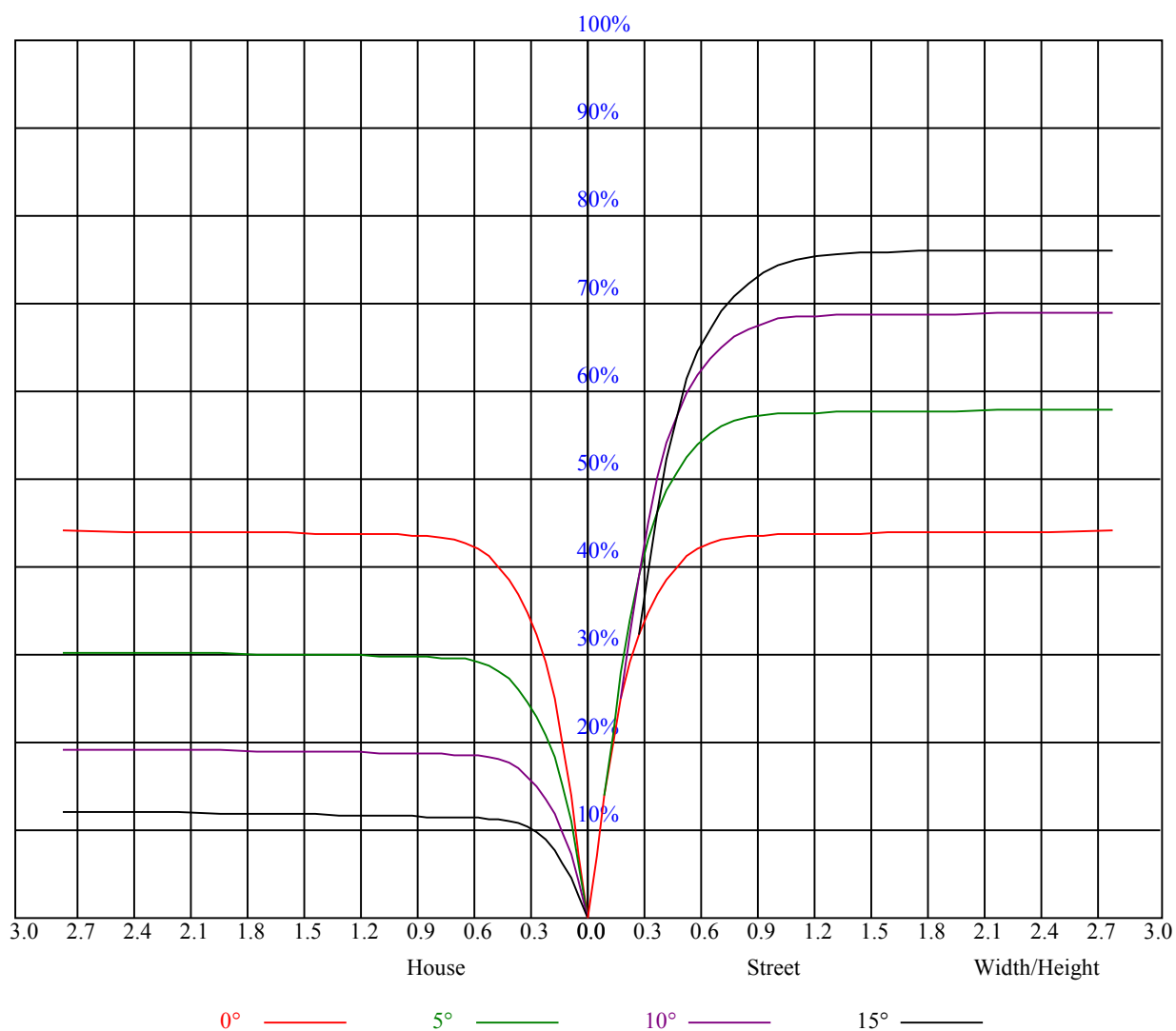
C90 ———

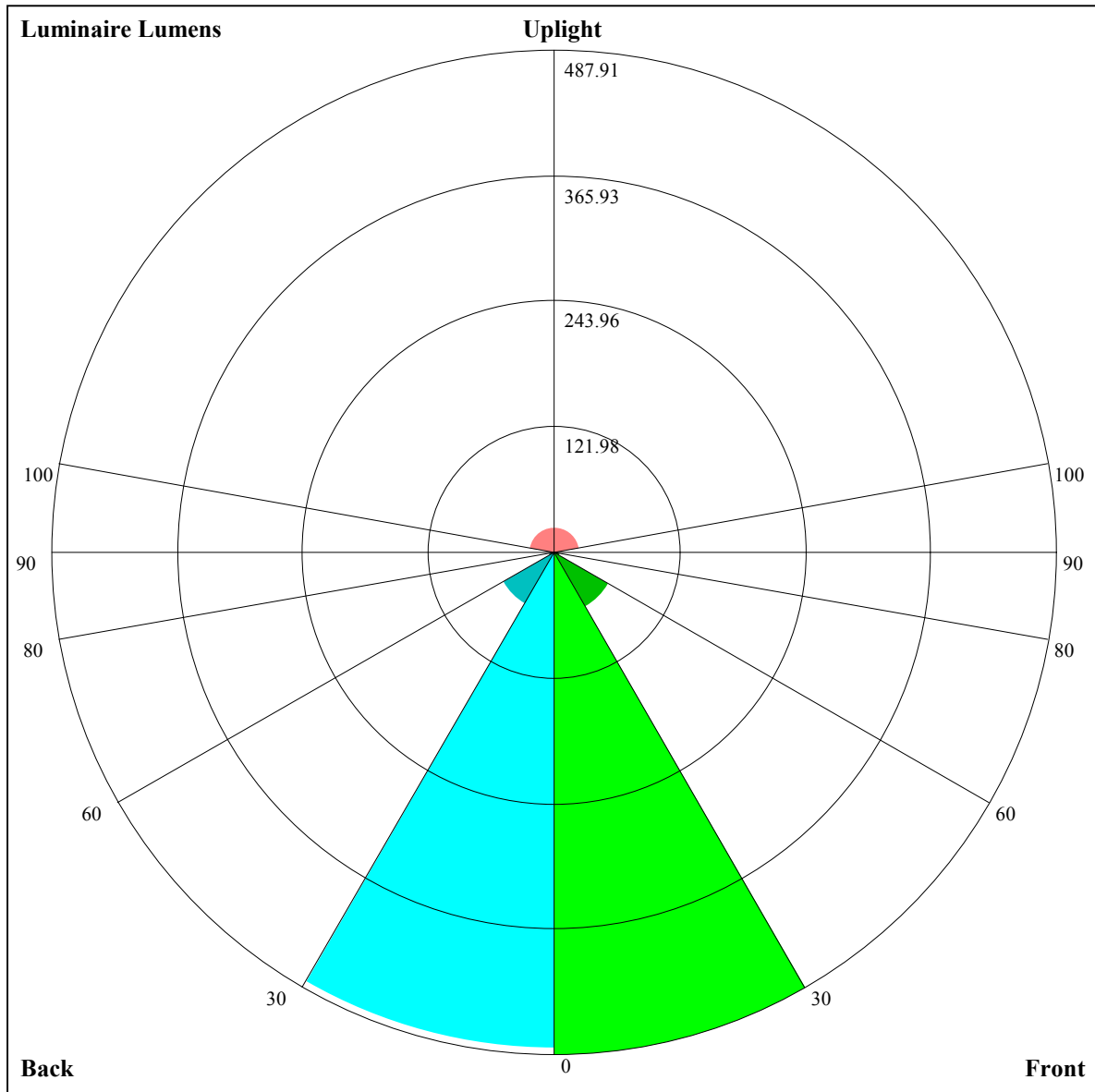
Illumination assessment according UGR											
Rf of Ceiling		70	70	50	50	30	70	70	50	50	30
Rf of Wall		50	30	50	30	30	50	30	50	30	30
Rf of Floor		20	20	20	20	20	20	20	20	20	20
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	17.50	18.42	17.86	18.73	19.04	17.04	17.96	17.41	18.27	18.59
	3H	17.55	18.37	17.94	18.71	19.06	17.07	17.89	17.46	18.23	18.58
	4H	17.73	18.48	18.13	18.84	19.21	17.21	17.96	17.61	18.32	18.69
	6H	18.15	18.85	18.57	19.22	19.62	17.73	18.42	18.14	18.80	19.20
	8H	18.41	19.07	18.83	19.46	19.86	18.02	18.68	18.44	19.06	19.47
	12H	18.67	19.29	19.09	19.69	20.11	18.22	18.85	18.65	19.24	19.66
4H	2H	17.25	18.01	17.65	18.36	18.73	16.80	17.56	17.20	17.92	18.28
	3H	17.40	18.04	17.83	18.44	18.86	16.94	17.58	17.36	17.97	18.39
	4H	17.77	18.32	18.21	18.74	19.19	17.26	17.81	17.70	18.24	18.69
	6H	18.43	18.92	18.91	19.38	19.83	18.07	18.55	18.54	19.01	19.46
	8H	18.87	19.32	19.35	19.78	20.25	18.54	18.99	19.03	19.45	19.93
	12H	19.29	19.71	19.78	20.16	20.68	18.89	19.31	19.38	19.76	20.28
8H	4H	17.84	18.29	18.32	18.75	19.22	17.38	17.83	17.86	18.29	18.76
	6H	18.78	19.14	19.28	19.62	20.14	18.48	18.84	18.98	19.32	19.84
	8H	19.41	19.71	19.94	20.24	20.73	19.14	19.45	19.68	19.97	20.47
	12H	19.99	20.22	20.53	20.74	21.26	19.63	19.86	20.18	20.38	20.90
12H	4H	17.88	18.30	18.37	18.75	19.27	17.43	17.85	17.92	18.30	18.82
	6H	18.94	19.25	19.48	19.77	20.27	18.66	18.96	19.19	19.49	19.98
	8H	19.60	19.83	20.14	20.35	20.87	19.35	19.58	19.89	20.10	20.62
Variation with the observer position at spacings:											
S = 1.0H		5.5/-5.4					5.5/-5.4				
S = 1.5H		7.2/-4.0					7.2/-4.0				
S = 2.0H		8.4/-2.8					8.4/-2.8				
Standard tables:		BK3					BK3				
Uncorrected UGR		0.0					0.0				

UGR calculation is based on CIE Publ. 117 ,S/H = 0.25



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	1.07	1.07	1.07	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	0.99	0.96	0.94	0.97	0.94	0.92	0.93	0.91	0.89	0.90	0.88	0.87	0.87	0.85	0.84	0.83
2	0.94	0.90	0.87	0.92	0.89	0.86	0.89	0.87	0.85	0.87	0.85	0.83	0.84	0.82	0.81	0.80
3	0.90	0.86	0.82	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.81	0.79	0.82	0.80	0.78	0.77
4	0.86	0.82	0.79	0.85	0.81	0.78	0.83	0.80	0.77	0.81	0.79	0.76	0.80	0.77	0.75	0.74
5	0.83	0.78	0.75	0.82	0.78	0.75	0.80	0.77	0.74	0.79	0.76	0.74	0.78	0.75	0.73	0.72
6	0.80	0.76	0.73	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.70
7	0.77	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
8	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
9	0.73	0.69	0.66	0.72	0.68	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.64
10	0.71	0.67	0.64	0.70	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.69	0.66	0.64	0.63





Luminaire Lumens:

FL=487.91,FM=61.42,FH=6.75,FVH=3.54

BL=481.49,BM=57.05,BH=5.84,BVH=2.96

UL=5.16,UH=24.55

BUG Rating:B1-U2-G0

Nata 1653-S

Intensity data(cd)										Appendix Page: 16 Total:16	
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	4461.22	4178.78	2779.80	1324.11	772.44	546.71	388.15	172.22	32.98		
45.0	4492.60	4321.38	2976.35	1410.54	793.36	551.11	396.41	182.29	39.20		
90.0	4484.34	4216.77	2665.83	1091.71	740.40	512.69	350.27	155.97	23.01		
135.0	4466.73	4346.70	3036.91	1487.07	799.97	529.09	380.99	172.55	30.89		
180.0	4461.22	4120.97	2603.07	1085.38	702.85	481.03	330.83	135.22	16.41		
225.0	4492.60	4095.10	2465.98	1070.46	694.04	484.72	320.92	125.91	14.65		
270.0	4484.34	4170.52	2742.36	1295.48	760.88	519.73	357.87	161.59	24.83		
315.0	4466.73	3833.03	2383.94	1073.16	685.01	510.87	340.58	132.19	18.99		
360.0	4461.22	4178.78	2779.80	1324.11	772.44	546.71	388.15	172.22	32.98		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	7.98	6.72	6.50	6.50	6.72	6.99	7.27	8.20	7.21		
45.0	8.42	6.88	6.77	6.72	6.88	6.99	7.16	9.69	7.05		
90.0	7.43	6.33	6.06	6.00	5.95	5.89	5.95	8.92	5.73		
135.0	7.71	6.00	5.73	5.67	5.62	5.56	5.51	5.51	5.34		
180.0	6.55	5.78	5.56	5.51	5.45	5.45	5.40	5.29	5.34		
225.0	6.44	5.84	5.67	5.56	5.56	5.40	5.18	5.01	4.90		
270.0	7.10	6.11	5.84	5.78	5.73	5.67	5.62	6.55	5.62		
315.0	6.88	6.22	6.06	6.00	5.95	5.95	6.00	9.08	6.28		
360.0	7.98	6.72	6.50	6.50	6.72	6.99	7.27	8.20	7.21		
C/γ(°)	90.0										
0.0	4.73										
45.0	4.79										
90.0	4.73										
135.0	4.68										
180.0	4.68										
225.0	4.73										
270.0	4.73										
315.0	4.73										
360.0	4.73										