
Nata

Client:

LumCAT: 1653-S

Luminaire: 92.70.043.00

Report No: NT2018040401

Test No: nata-0100

LampCAT: CITIZEN CLU700

Lamp flux(lm): 378.0

Number of Lamps: 1

Length(mm): 32

Phm Type: C

Voltage(V): 9.7000

Current(A): 0.4100

Power (W): 3.9800

PF: 0.0000

Ballast type: DC

Width(mm): 32

Height(mm): 0

Photometric Results

Lumens(lm): 339.81, Efficiency(%): 89.90% , Luminous Efficacy(lm/W): 85.38

Central intensity(cd): 2495.844, Maximum intensity(cd): 2495.844

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=16.0

[C90/270]Total=16.0

Field angle(10%Imax): [C0/180]Total=33.8

[C90/270]Total=33.8

Maximum s/h(1/2): C0_180=0.27 C90_270=0.27

Maximum s/h(1/4): C0_180=0.29 C90_270=0.29

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 93.76%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 94.744%

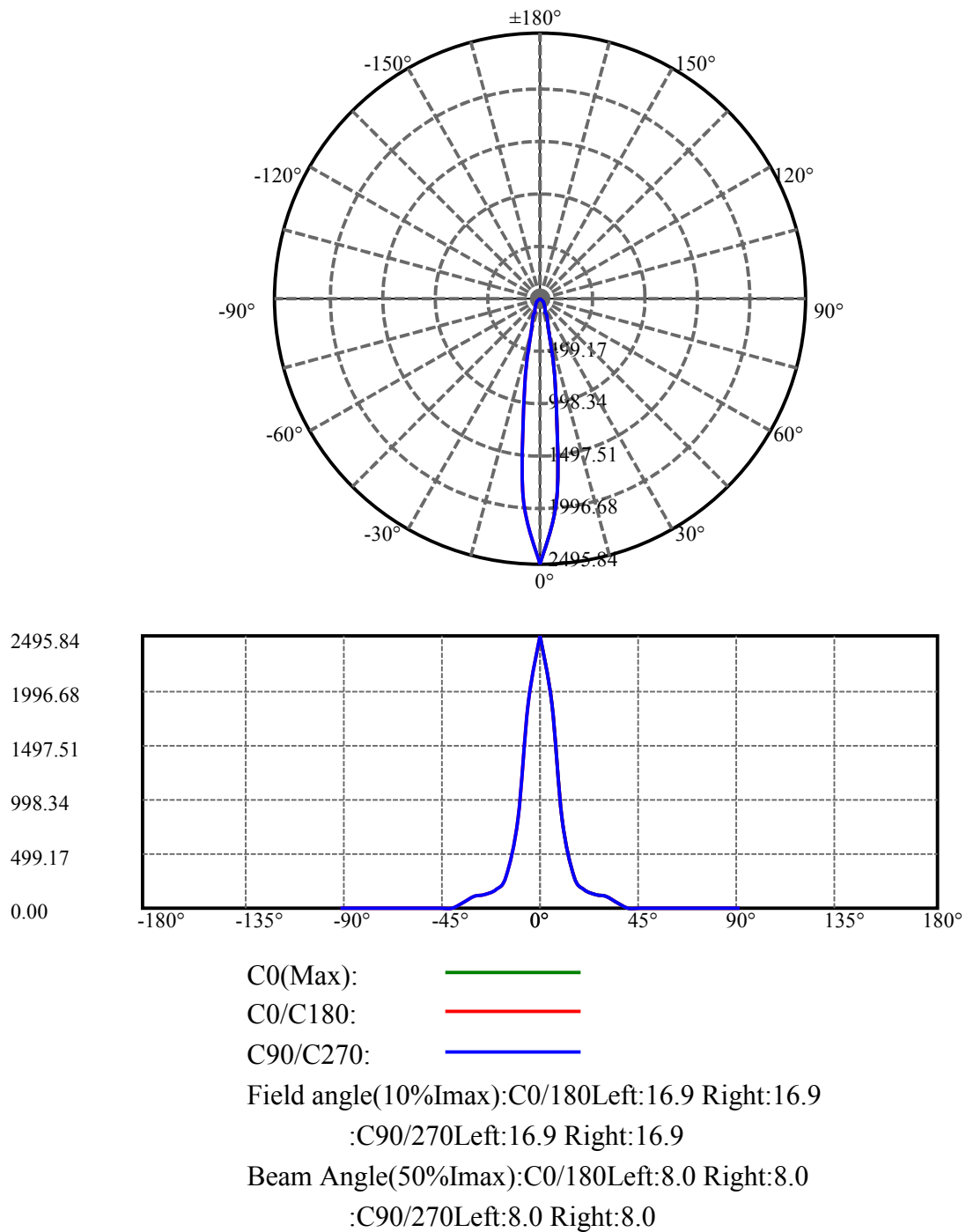
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2495.844	14.926	14.926	3.949%	4.392%
5.0	1870.121	89.342	104.268	23.635%	30.684%
10.0	816.170	77.686	181.953	20.552%	53.546%
15.0	301.682	42.799	224.752	11.323%	66.141%
20.0	165.128	30.957	255.709	8.190%	75.252%
25.0	131.585	30.482	286.191	8.064%	84.222%
30.0	110.822	30.373	316.564	8.035%	93.160%
35.0	46.474	14.612	331.176	3.865%	97.460%
40.0	5.334	1.879	333.055	.497%	98.013%
45.0	1.879	0.728	333.783	.193%	98.228%
50.0	1.562	0.656	334.439	.174%	98.421%
55.0	1.466	0.658	335.097	.174%	98.614%
60.0	1.438	0.683	335.78	.181%	98.815%
65.0	1.418	0.704	336.484	.186%	99.022%
70.0	1.404	0.723	337.207	.191%	99.235%
75.0	1.383	0.732	337.94	.194%	99.451%
80.0	1.376	0.743	338.683	.197%	99.669%
85.0	1.376	0.752	339.434	.199%	99.891%
90.0	1.356	0.372	339.806	.098%	100.000%

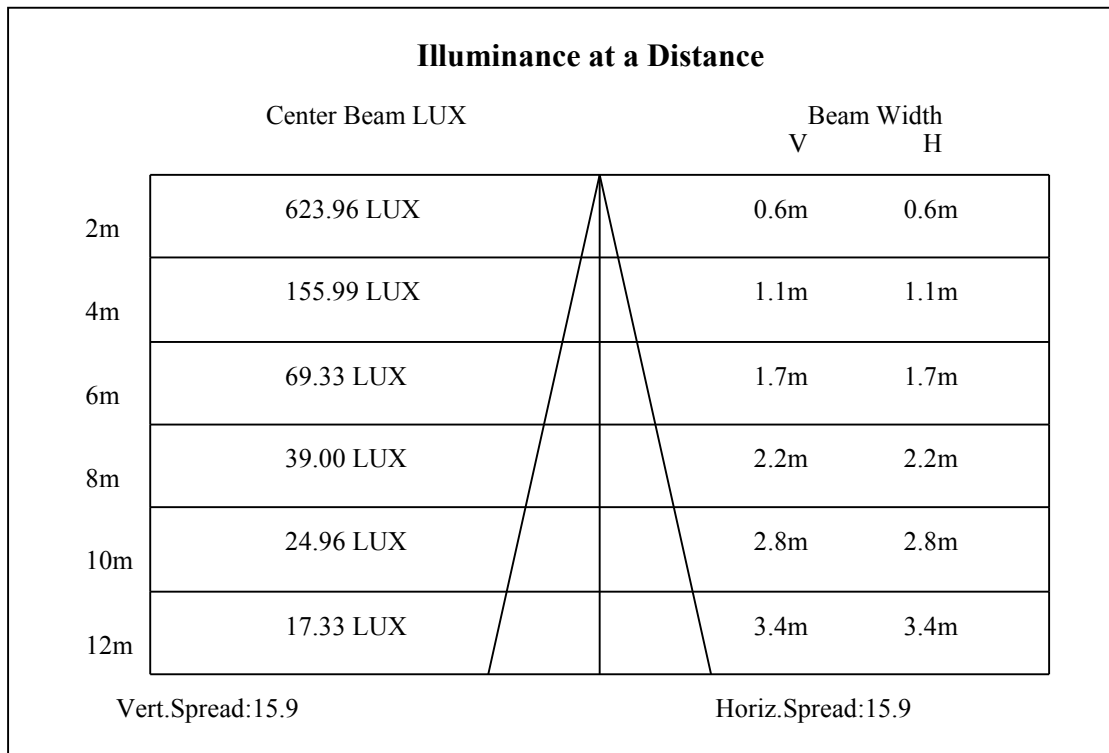
ZONAL LUMEN SUMMARY

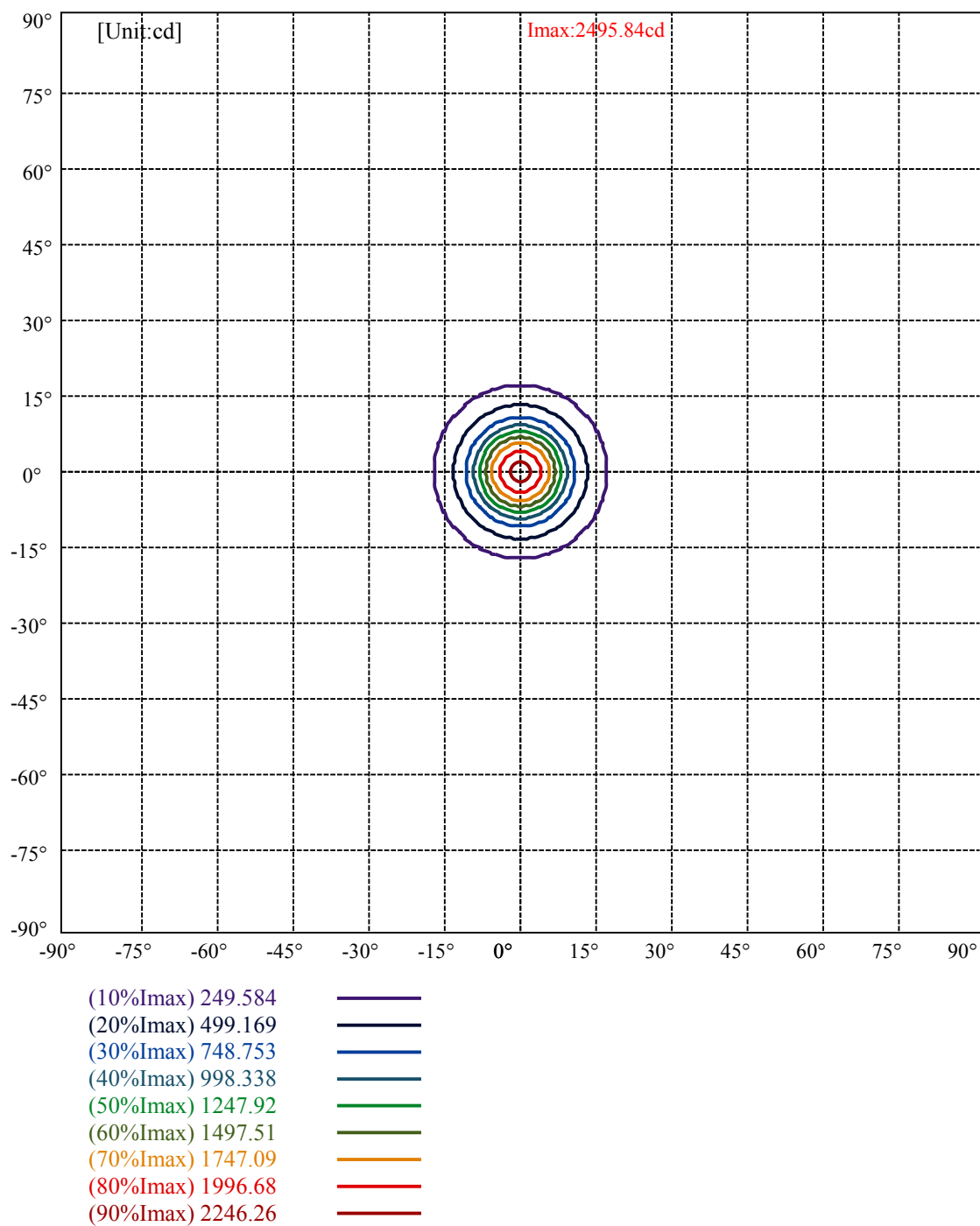
Zone	Lumens	%Lamp	%Fixt
0-30	316.56	83.75%	93.16%
0-40	333.05	88.11%	98.01%
0-60	335.78	88.83%	98.82%
0-90	339.43	89.80%	99.89%
0-120	339.43	89.80%	99.89%
0-180	339.81	89.90%	100.00%
60-90	4.34	1.15%	1.28%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-22.65	271.84	71.92%	80.00%

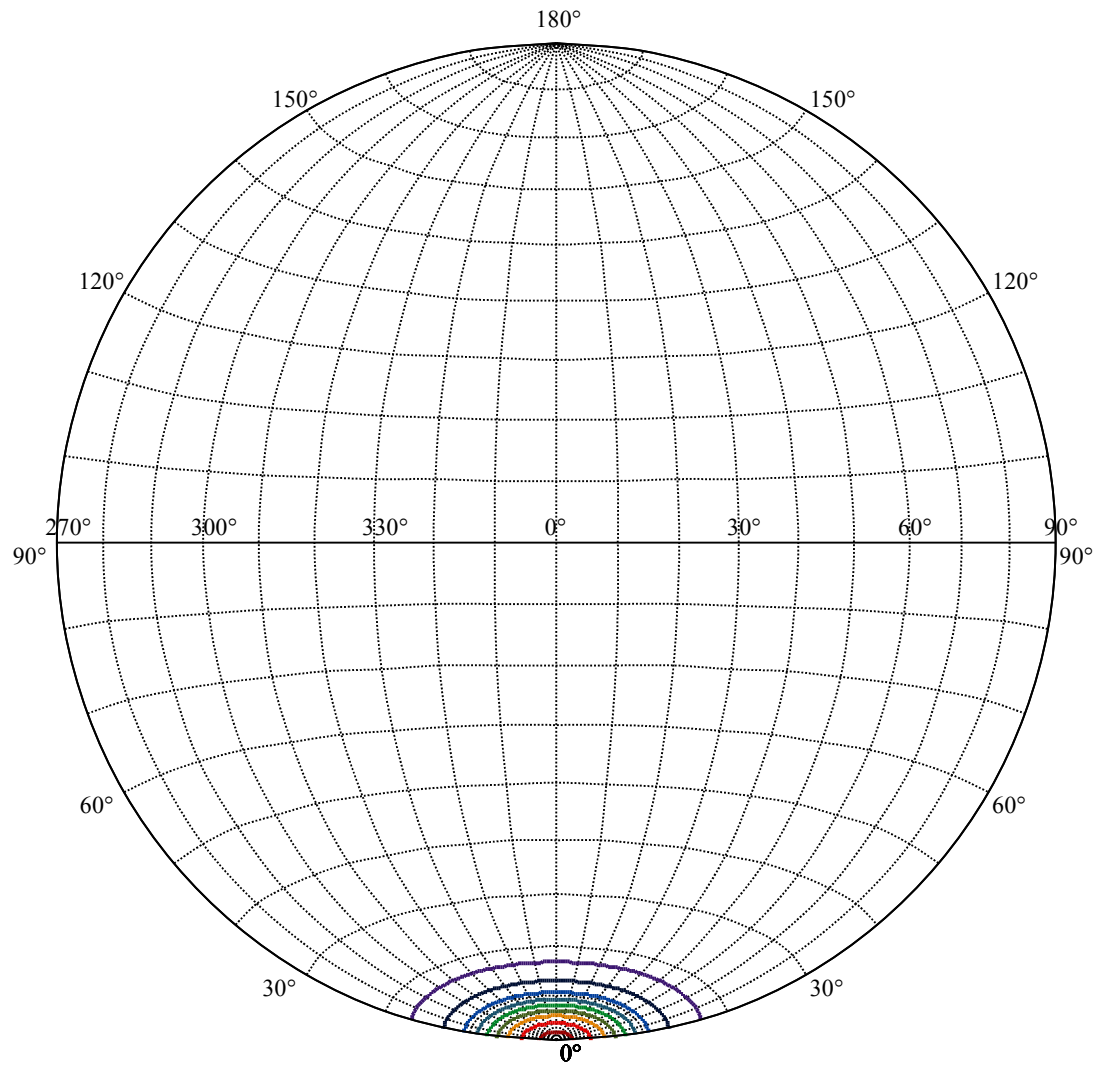
ZONAL LUMEN SUMMARY

0-10	181.95
10-20	73.76
20-30	60.85
30-40	16.49
40-50	1.38
50-60	1.34
60-70	1.43
70-80	1.48
80-90	0.75
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







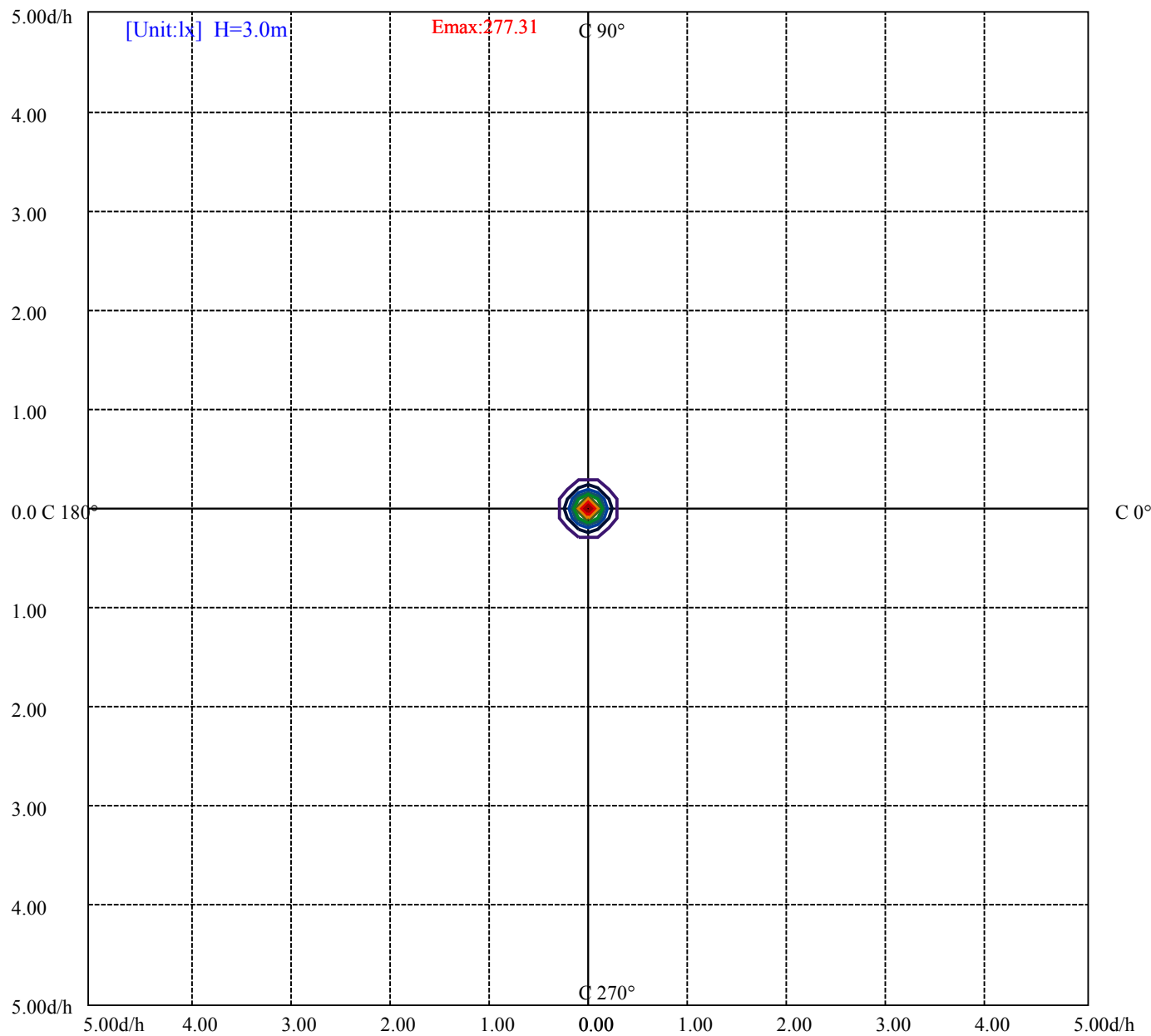


House

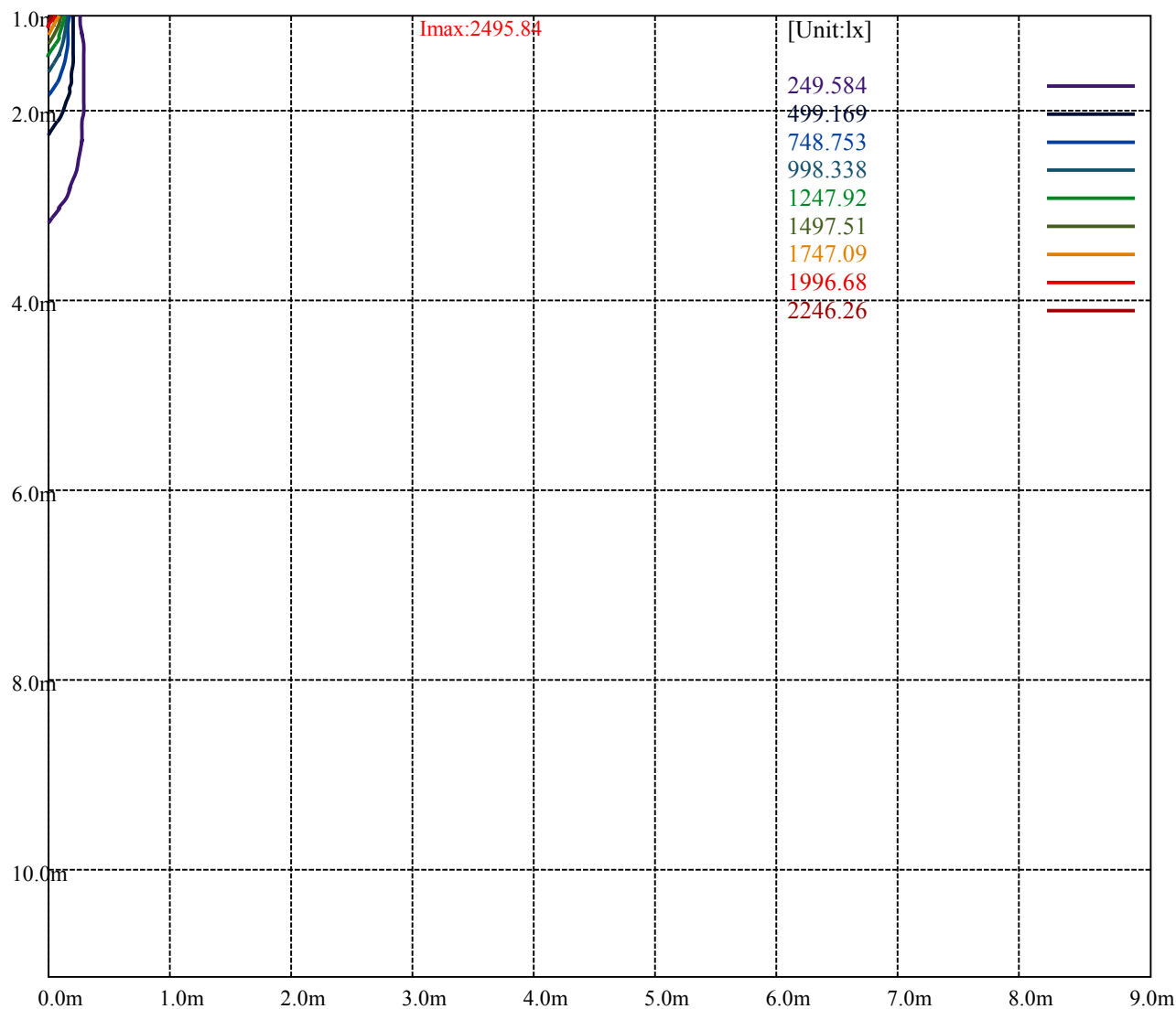
[Unit:cd]

Road

Imax:2495.84	
(10%Imax) 249.584	
(20%Imax) 499.169	
(30%Imax) 748.753	
(40%Imax) 998.338	
(50%Imax) 1247.92	
(60%Imax) 1497.51	
(70%Imax) 1747.09	
(80%Imax) 1996.68	
(90%Imax) 2246.26	



(10%E _{max}) 27.73144	—
(20%E _{max}) 55.46278	—
(30%E _{max}) 83.19422	—
(40%E _{max}) 110.9256	—
(50%E _{max}) 138.6567	—
(60%E _{max}) 166.3889	—
(70%E _{max}) 194.12	—
(80%E _{max}) 221.8511	—
(90%E _{max}) 249.5822	—



Luminance Table

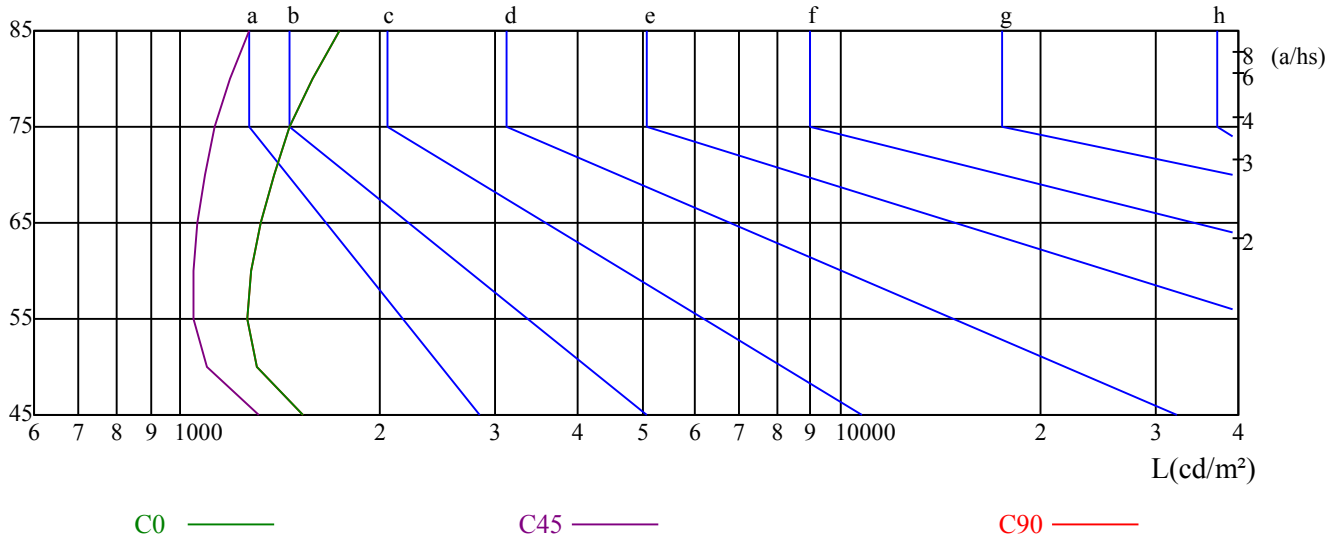
γ	45	50	55	60	65	70	75	80	85
C0	1538	1305	1259	1282	1324	1388	1464	1580	1741
C45	1316	1099	1045	1047	1062	1092	1128	1188	1273
C90	1538	1305	1259	1282	1324	1388	1464	1580	1741

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3276	3276	3276	5219	5219	5219	15422	15422	15422

Glare Table

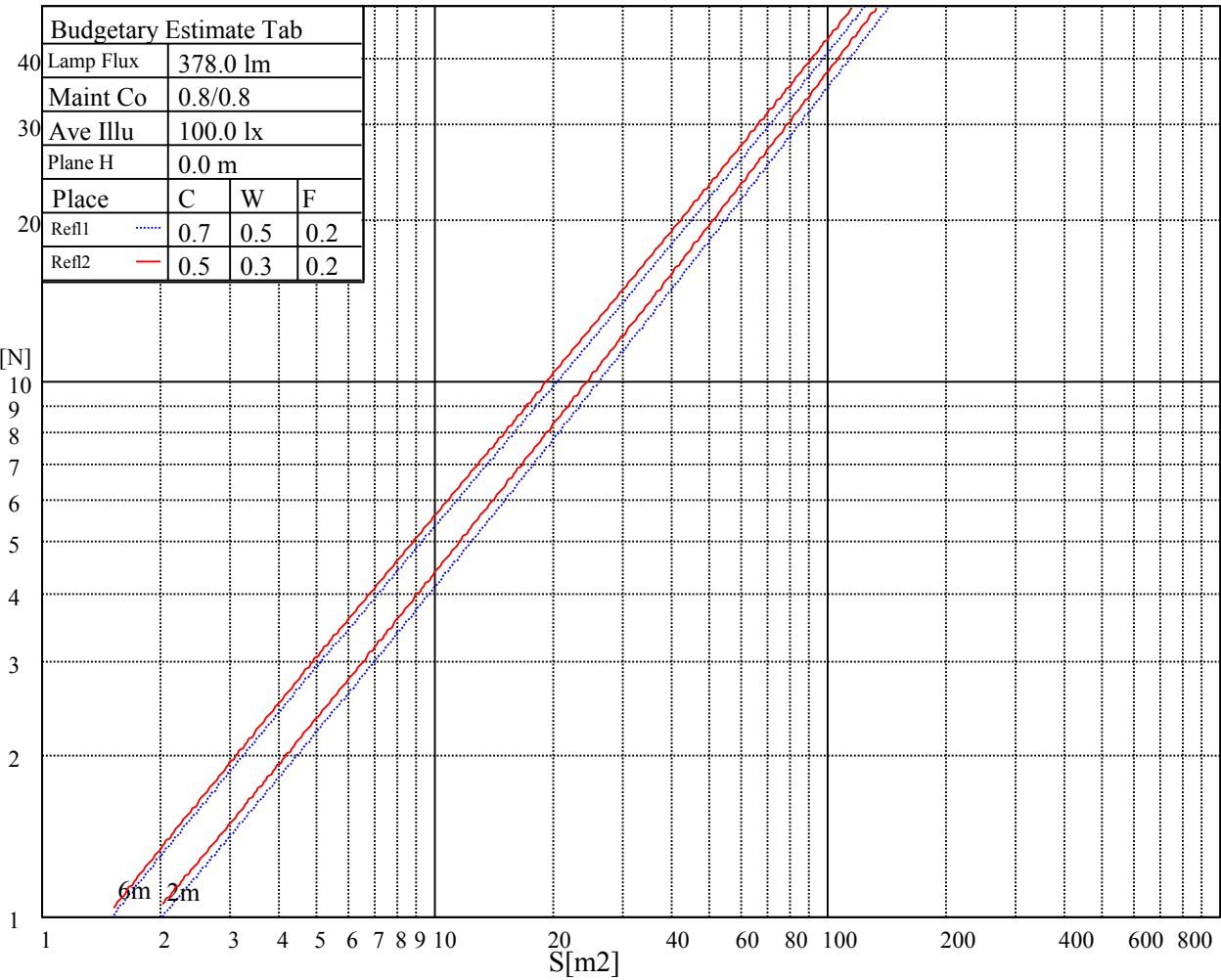
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve

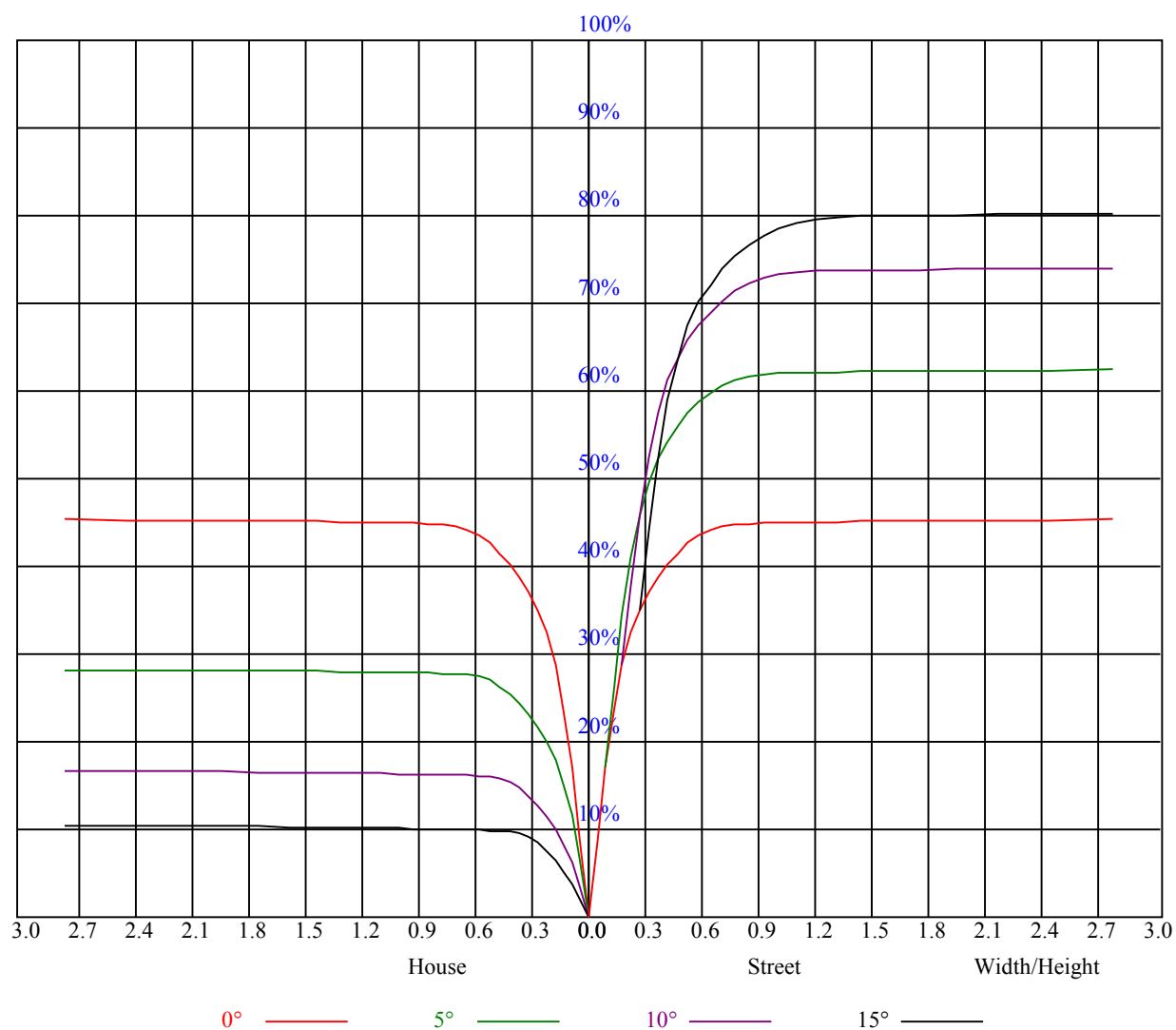
 $\gamma(^{\circ})$ 

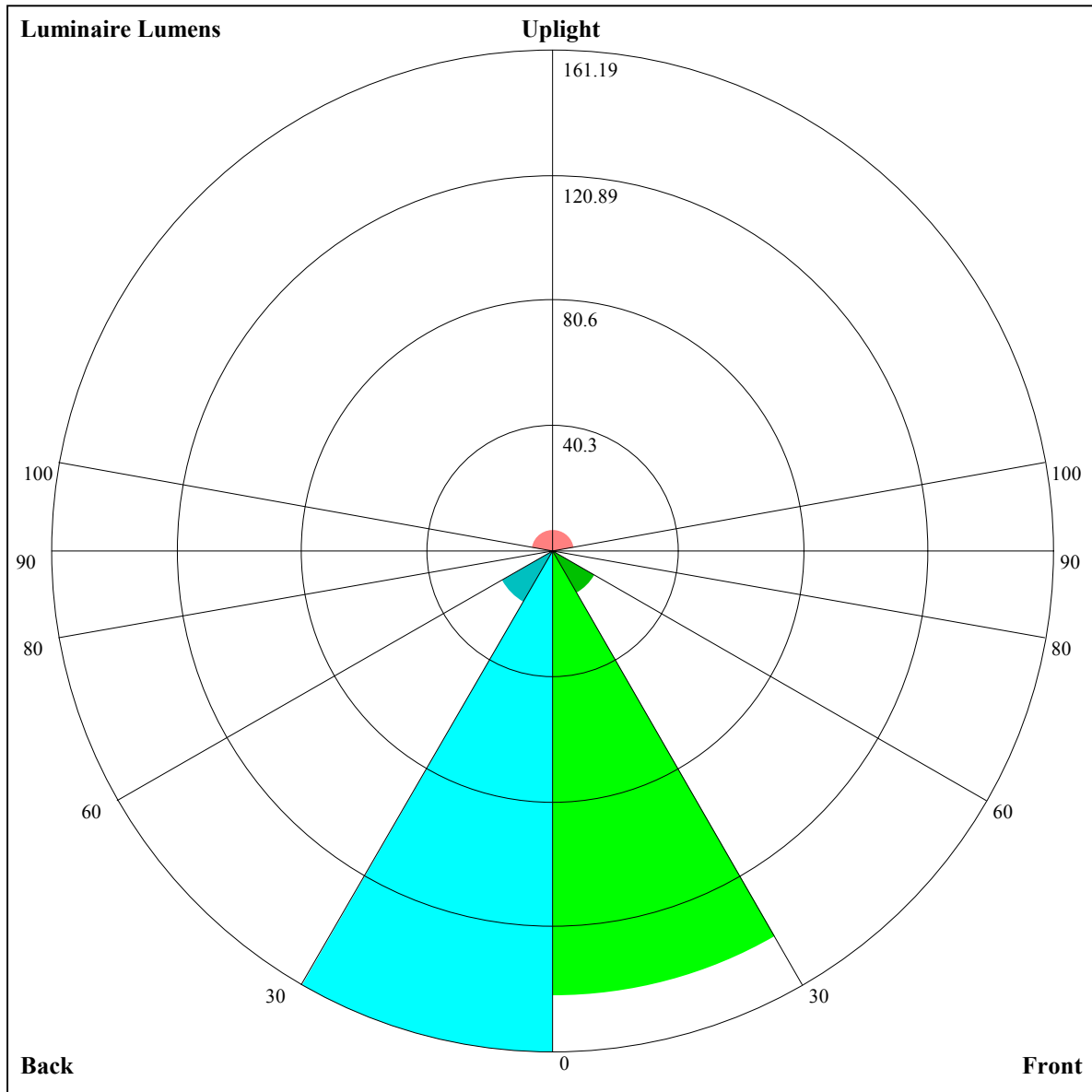
Illumination assessment according UGR											
Rf of Ceiling	70	70	50	50	30	70	70	50	50	30	
Rf of Wall	50	30	50	30	30	50	30	50	30	30	
Rf of Floor	20	20	20	20	20	20	20	20	20	20	
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	10.83	11.74	11.19	12.05	12.36	9.46	10.36	9.82	10.68	10.99
	3H	10.87	11.67	11.25	12.01	12.36	9.60	10.41	9.99	10.75	11.09
	4H	10.99	11.73	11.39	12.09	12.46	9.82	10.56	10.22	10.92	11.29
	6H	11.25	11.93	11.67	12.31	12.71	10.21	10.89	10.63	11.27	11.67
	8H	11.41	12.06	11.84	12.45	12.86	10.44	11.09	10.86	11.48	11.89
	12H	11.64	12.25	12.07	12.65	13.07	10.72	11.33	11.14	11.73	12.15
4H	2H	10.57	11.32	10.97	11.67	12.04	9.24	9.99	9.64	10.34	10.71
	3H	10.69	11.32	11.12	11.72	12.13	9.51	10.14	9.94	10.53	10.95
	4H	10.97	11.51	11.41	11.94	12.39	9.92	10.46	10.36	10.89	11.34
	6H	11.37	11.85	11.85	12.30	12.76	10.50	10.98	10.97	11.43	11.88
	8H	11.69	12.13	12.17	12.59	13.07	10.89	11.34	11.38	11.80	12.27
	12H	12.09	12.49	12.58	12.95	13.47	11.34	11.75	11.83	12.20	12.73
8H	4H	10.96	11.40	11.45	11.86	12.34	9.98	10.42	10.47	10.88	11.36
	6H	11.53	11.89	12.04	12.37	12.89	10.76	11.12	11.27	11.60	12.12
	8H	12.03	12.33	12.57	12.86	13.36	11.36	11.66	11.89	12.18	12.68
	12H	12.61	12.84	13.16	13.36	13.88	11.99	12.22	12.54	12.73	13.26
12H	4H	10.96	11.37	11.45	11.82	12.34	10.00	10.41	10.49	10.86	11.38
	6H	11.63	11.93	12.17	12.46	12.95	10.89	11.19	11.43	11.71	12.21
	8H	12.16	12.39	12.71	12.91	13.43	11.52	11.75	12.06	12.26	12.79
Variation with the observer position at spacings:											
S = 1.0H		5.9/-6.8					5.9/-6.8				
S = 1.5H		8.1/-5.2					8.1/-5.2				
S = 2.0H		9.6/-4.0					9.6/-4.0				
Standard tables:		BK2					BK2				
Uncorrected UGR		-5.4					-5.4				

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	1.12	1.12	1.12	1.09	1.09	1.09	1.04	1.04	1.04	1.00	1.00	1.00	0.96	0.96	0.96	0.94
1	1.01	0.97	0.95	0.99	0.96	0.93	0.95	0.92	0.90	0.91	0.89	0.87	0.88	0.86	0.85	0.83
2	0.96	0.92	0.88	0.94	0.91	0.87	0.91	0.88	0.86	0.88	0.86	0.84	0.86	0.84	0.82	0.80
3	0.92	0.87	0.84	0.90	0.86	0.83	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.81	0.79	0.78
4	0.88	0.84	0.80	0.87	0.83	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.82	0.79	0.77	0.76
5	0.85	0.81	0.77	0.84	0.80	0.77	0.83	0.79	0.76	0.81	0.78	0.76	0.80	0.77	0.75	0.74
6	0.82	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
7	0.80	0.76	0.73	0.79	0.75	0.72	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.74	0.71	0.70
8	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.70	0.69
9	0.76	0.72	0.69	0.75	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
10	0.74	0.70	0.67	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.67	0.72	0.69	0.67	0.66





Luminaire Lumens:

FL=143.04,FM=15.66,FH=1.43,FVH=0.75

BL=161.19,BM=19.35,BH=1.44,BVH=0.74

UL=1.48,UH=7.04

BUG Rating:B1-U1-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	2509.47	1675.92	679.40	280.79	152.18	127.07	104.72	32.37	3.30		
45.0	2525.44	1556.99	558.82	287.94	148.43	125.36	95.25	21.47	2.97		
90.0	2462.12	1068.59	477.28	213.07	146.51	126.35	84.29	18.83	2.86		
135.0	2486.35	1933.58	785.65	284.09	164.78	132.74	118.87	49.50	4.07		
180.0	2509.47	2131.23	951.82	313.44	169.02	133.07	120.52	59.08	5.45		
225.0	2525.44	2311.82	1094.25	366.57	182.35	136.43	123.22	70.42	7.16		
270.0	2462.12	2381.74	1255.84	409.07	194.79	139.79	125.25	81.87	12.44		
315.0	2486.35	1901.10	726.30	258.49	162.97	131.86	114.46	38.26	4.40		
360.0	2509.47	1675.92	679.40	280.79	152.18	127.07	104.72	32.37	3.30		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	1.65	1.54	1.43	1.43	1.43	1.43	1.38	1.38	1.43		
45.0	1.65	1.49	1.43	1.43	1.38	1.38	1.38	1.38	1.38		
90.0	1.60	1.49	1.43	1.43	1.43	1.38	1.38	1.38	1.32		
135.0	1.71	1.54	1.49	1.43	1.43	1.43	1.38	1.38	1.38		
180.0	1.93	1.60	1.49	1.49	1.43	1.38	1.43	1.38	1.38		
225.0	2.26	1.65	1.49	1.43	1.43	1.38	1.38	1.38	1.38		
270.0	2.53	1.65	1.49	1.43	1.38	1.43	1.38	1.38	1.38		
315.0	1.71	1.54	1.49	1.43	1.43	1.43	1.38	1.38	1.38		
360.0	1.65	1.54	1.43	1.43	1.43	1.43	1.38	1.38	1.43		
C/ γ (°)	90.0										
0.0	1.32										
45.0	1.38										
90.0	1.38										
135.0	1.38										
180.0	1.32										
225.0	1.32										
270.0	1.38										
315.0	1.38										
360.0	1.32										