



SGSO

Address: LIT by CARDI

Client:

LumCAT: 0017440227 KAI 15W 3000K 1800lm

Luminaire:

Report No:

Voltage(V): 230.0000

Test No: KYZ-A250930027-01-003

Current(A): 0.0690

LampCAT: LED

Power (W): 15.0000

Lamp flux(lm)

PF: 0.9453

Number of Lamps: 1

Ballast type:

Length(mm): -192

Width(mm): -192

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1800.00

Lumens(lm)/Power(W): 120.00

Central intensity(cd): 874.121

Maximum intensity(cd): 885.308

Angle of maximum intensity: $C=45.0$ $\gamma=5.0$

Beam Angle(50%Imax): [C0/180]Total=85.7

[C90/270]Total=85.7

Field angle(10%Imax): [C0/180]Total=141.2

[C90/270]Total=141.9

Maximum s/h(1/2): C0_180=1.20 C90_270=1.16

Maximum s/h(1/4): C0_180=1.22 C90_270=1.20

Up flux rate of LUM(%): 0.48%

Down flux rate of LUM(%): 99.52%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 86.776%

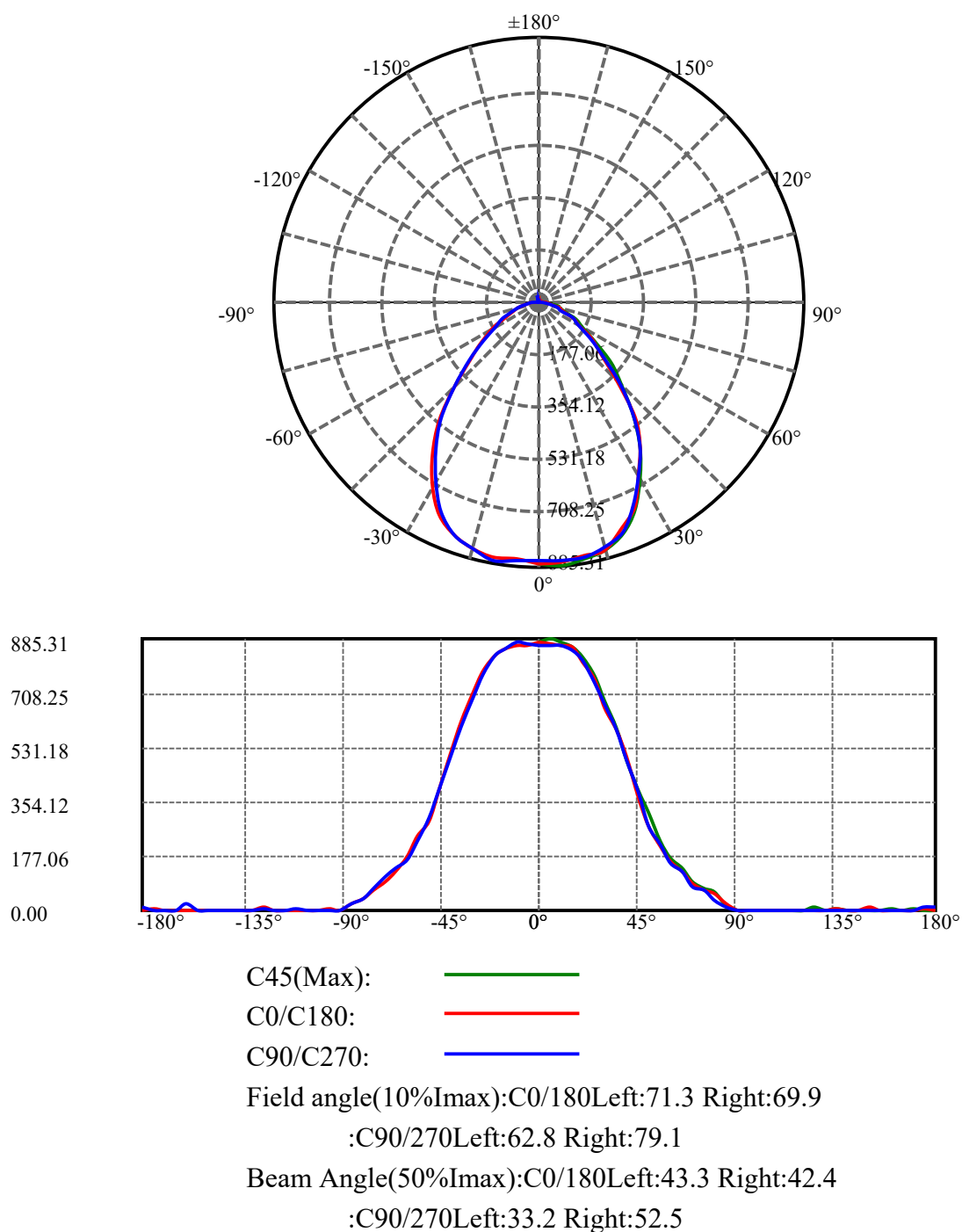
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	939.185	0.000	0	.000%	.000%
5.0	939.461	20.836	20.836	1.158%	1.158%
10.0	935.417	62.224	83.06	3.457%	4.614%
15.0	921.122	102.171	185.231	5.676%	10.291%
20.0	885.900	138.163	323.394	7.676%	17.966%
25.0	825.606	166.535	489.929	9.252%	27.218%
30.0	738.455	183.631	673.561	10.202%	37.420%
35.0	647.385	189.329	862.89	10.518%	47.938%
40.0	545.161	184.591	1047.481	10.255%	58.193%
45.0	426.683	166.943	1214.424	9.275%	67.468%
50.0	329.056	141.674	1356.098	7.871%	75.339%
55.0	244.468	115.693	1471.791	6.427%	81.766%
60.0	176.060	90.180	1561.971	5.010%	86.776%
65.0	140.209	71.330	1633.301	3.963%	90.739%
70.0	103.329	57.210	1690.511	3.178%	93.917%
75.0	80.091	44.479	1734.99	2.471%	96.388%
80.0	52.908	33.016	1768.005	1.834%	98.223%
85.0	19.420	18.233	1786.239	1.013%	99.236%
90.0	0.678	5.105	1791.344	.284%	99.519%
95.0	0.653	0.338	1791.682	.019%	99.538%
100.0	0.754	0.355	1792.037	.020%	99.558%
105.0	1.482	0.555	1792.592	.031%	99.589%
110.0	0.653	0.518	1793.11	.029%	99.617%
115.0	1.658	0.543	1793.653	.030%	99.647%
120.0	0.854	0.567	1794.22	.031%	99.679%
125.0	3.341	0.900	1795.119	.050%	99.729%
130.0	2.236	1.125	1796.244	.063%	99.791%
135.0	2.789	0.942	1797.186	.052%	99.844%
140.0	0.879	0.630	1797.816	.035%	99.879%
145.0	1.558	0.377	1798.193	.021%	99.900%
150.0	1.256	0.384	1798.578	.021%	99.921%
155.0	0.578	0.215	1798.793	.012%	99.933%
160.0	3.090	0.357	1799.15	.020%	99.953%
165.0	2.035	0.392	1799.542	.022%	99.975%
170.0	1.558	0.198	1799.74	.011%	99.986%
175.0	4.321	0.195	1799.935	.011%	99.996%
180.0	1.457	0.064	1799.999	.004%	100.000%

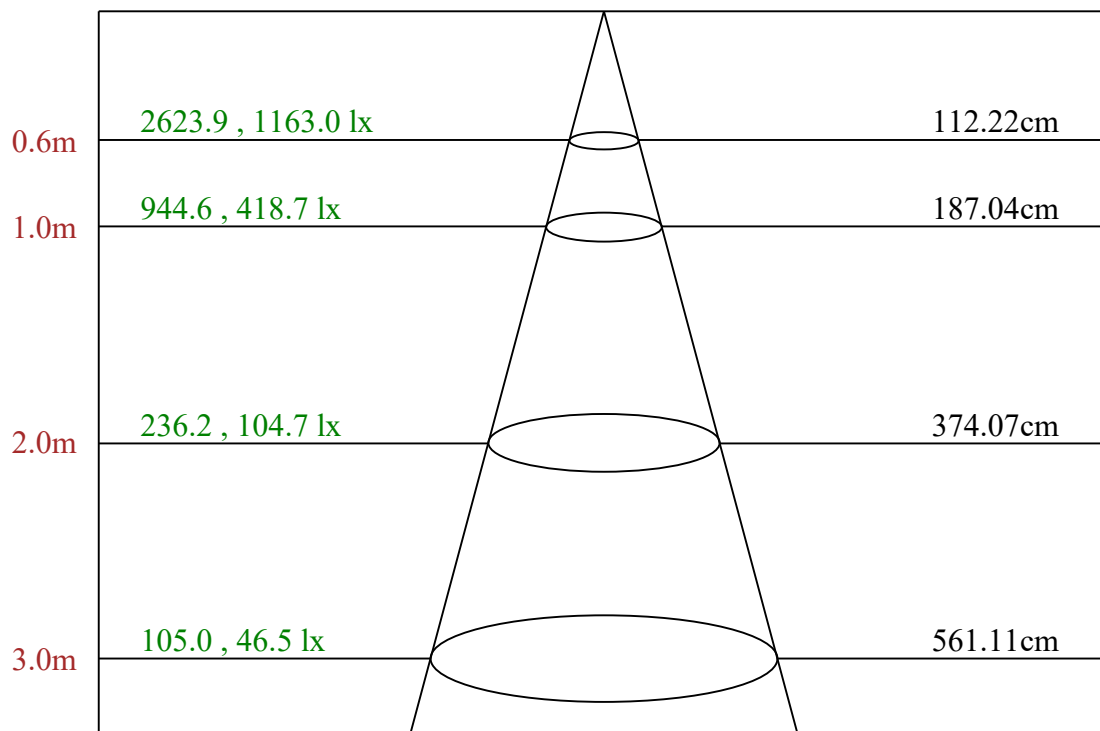
ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixt
0-30	673.56	37.42%
0-40	1047.48	58.19%
0-60	1561.97	86.78%
0-90	1791.34	99.52%
0-120	1794.22	99.68%
0-180	1800.00	100.00%
60-90	319.55	17.75%
90-120	7.98	0.44%
90-130	10.01	0.56%
90-150	12.34	0.69%
90-180	13.70	0.76%
0-53.63	1440.00	80.00%

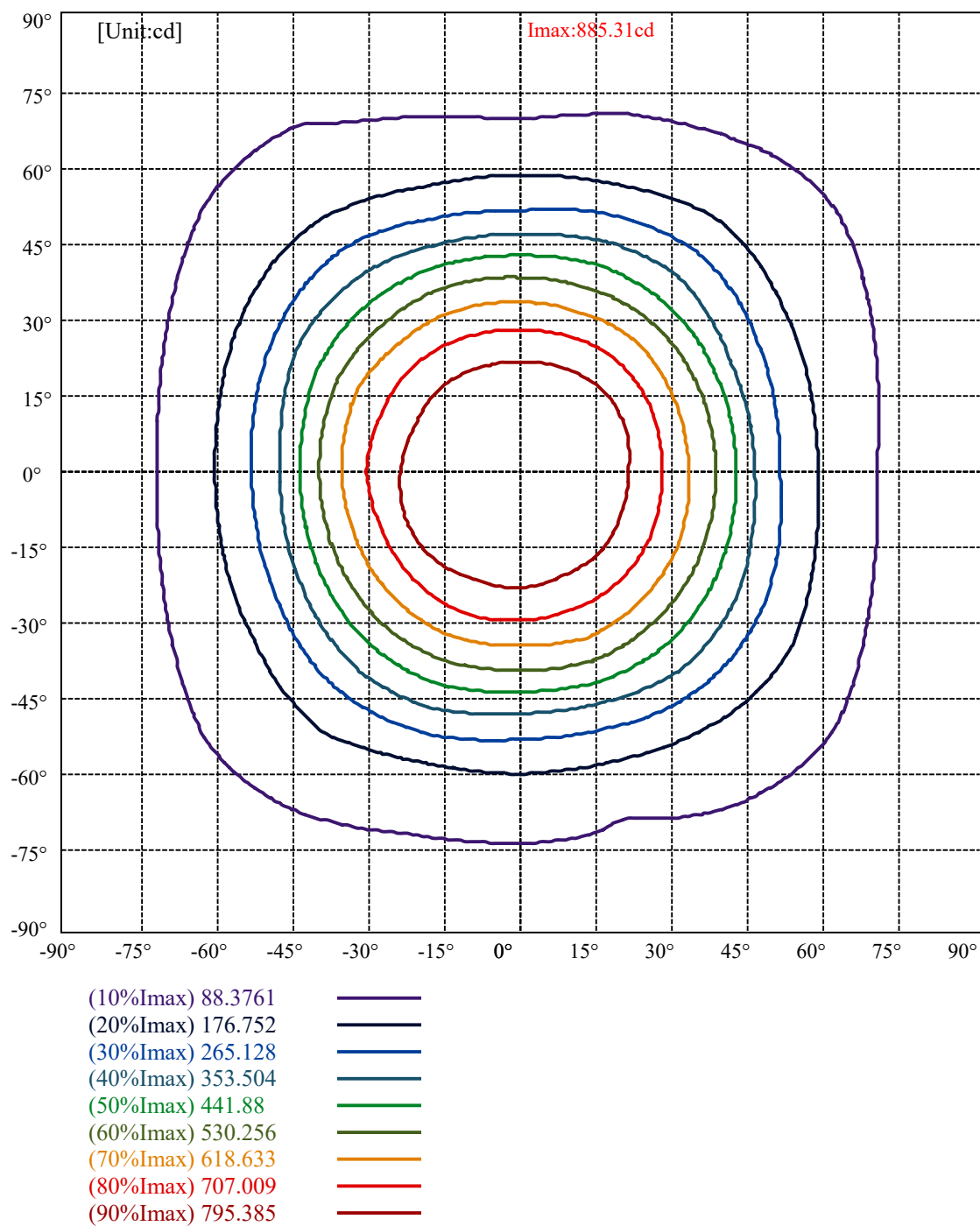
ZONAL LUMEN SUMMARY

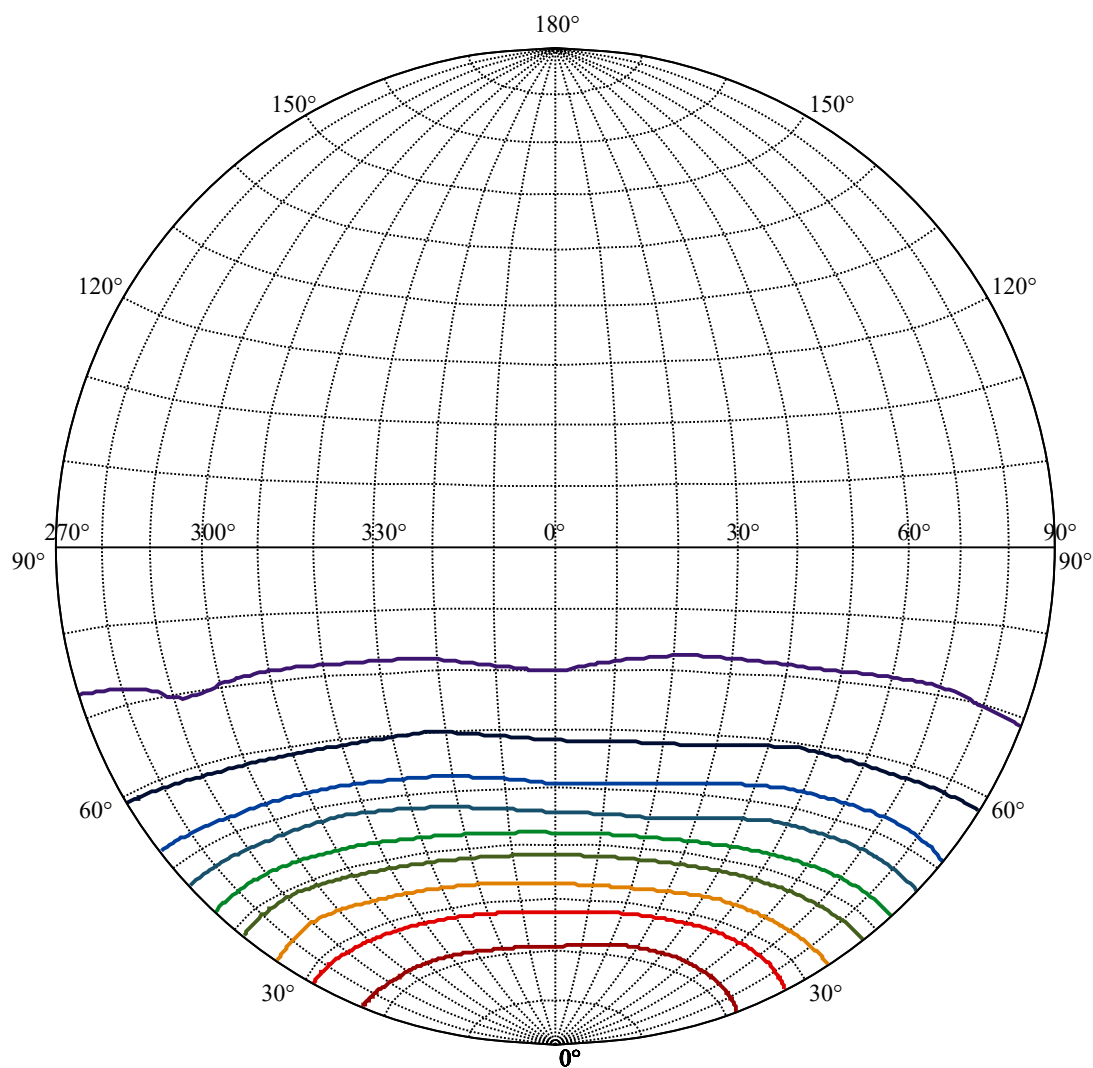
0-10	83.06
10-20	240.33
20-30	350.17
30-40	373.92
40-50	308.62
50-60	205.87
60-70	128.54
70-80	77.49
80-90	23.34
90-100	0.69
100-110	1.07
110-120	1.11
120-130	2.02
130-140	1.57
140-150	0.76
150-160	0.57
160-170	0.59
170-180	0.20





Max , Ave Beam angle of C45 plane 86.16





House

[Unit:cd]

Road

Imax:885.31

(10%Imax) 82.13393

(20%Imax) 164.2682

(30%Imax) 246.4014

(40%Imax) 328.5356

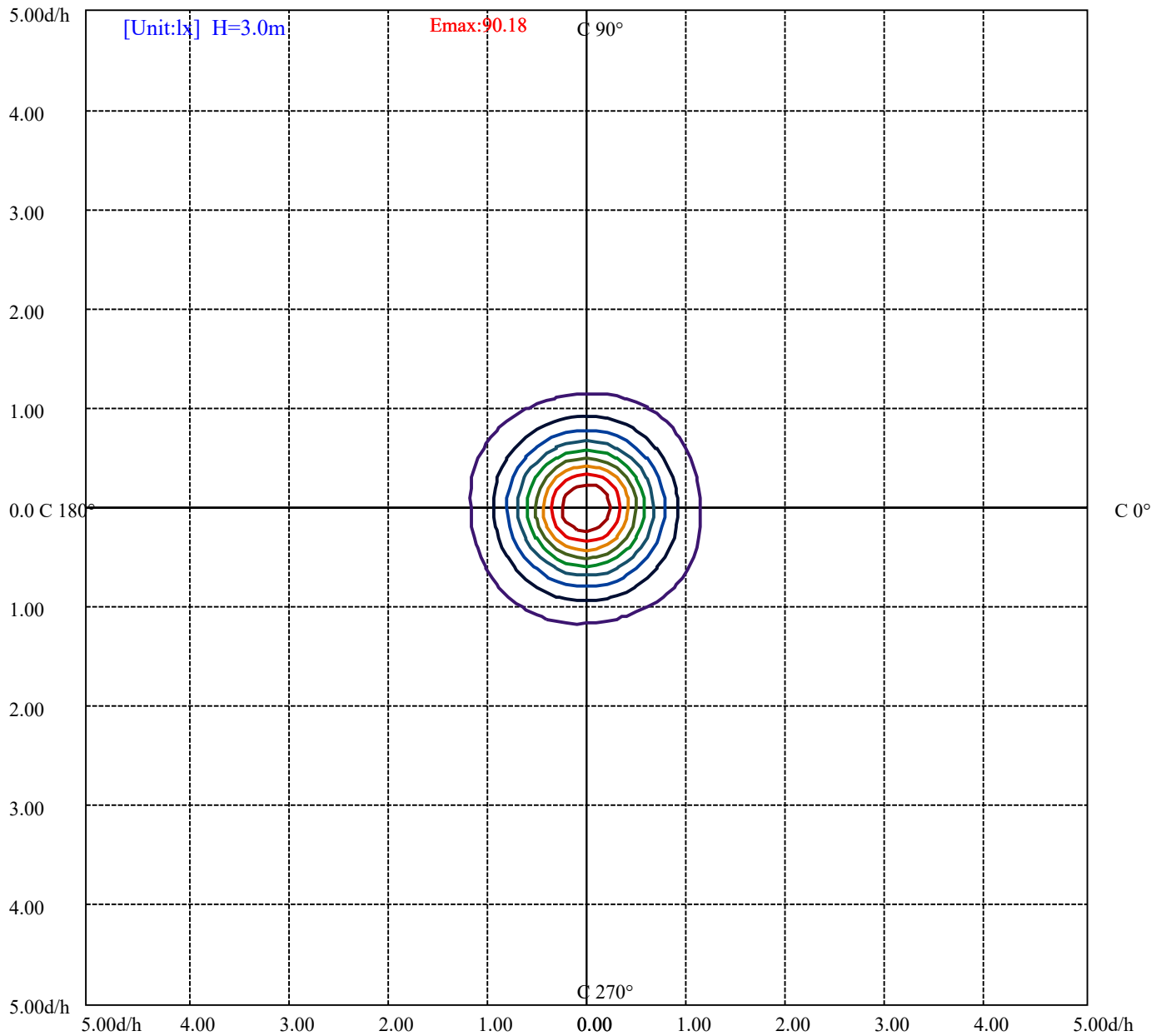
(50%Imax) 410.6697

(60%Imax) 492.8038

(70%Imax) 574.9379

(80%Imax) 657.0721

(90%Imax) 739.2052



(10%Emax) 9.018344

(20%Emax) 18.03669

(30%Emax) 27.05508

(40%Emax) 36.07338

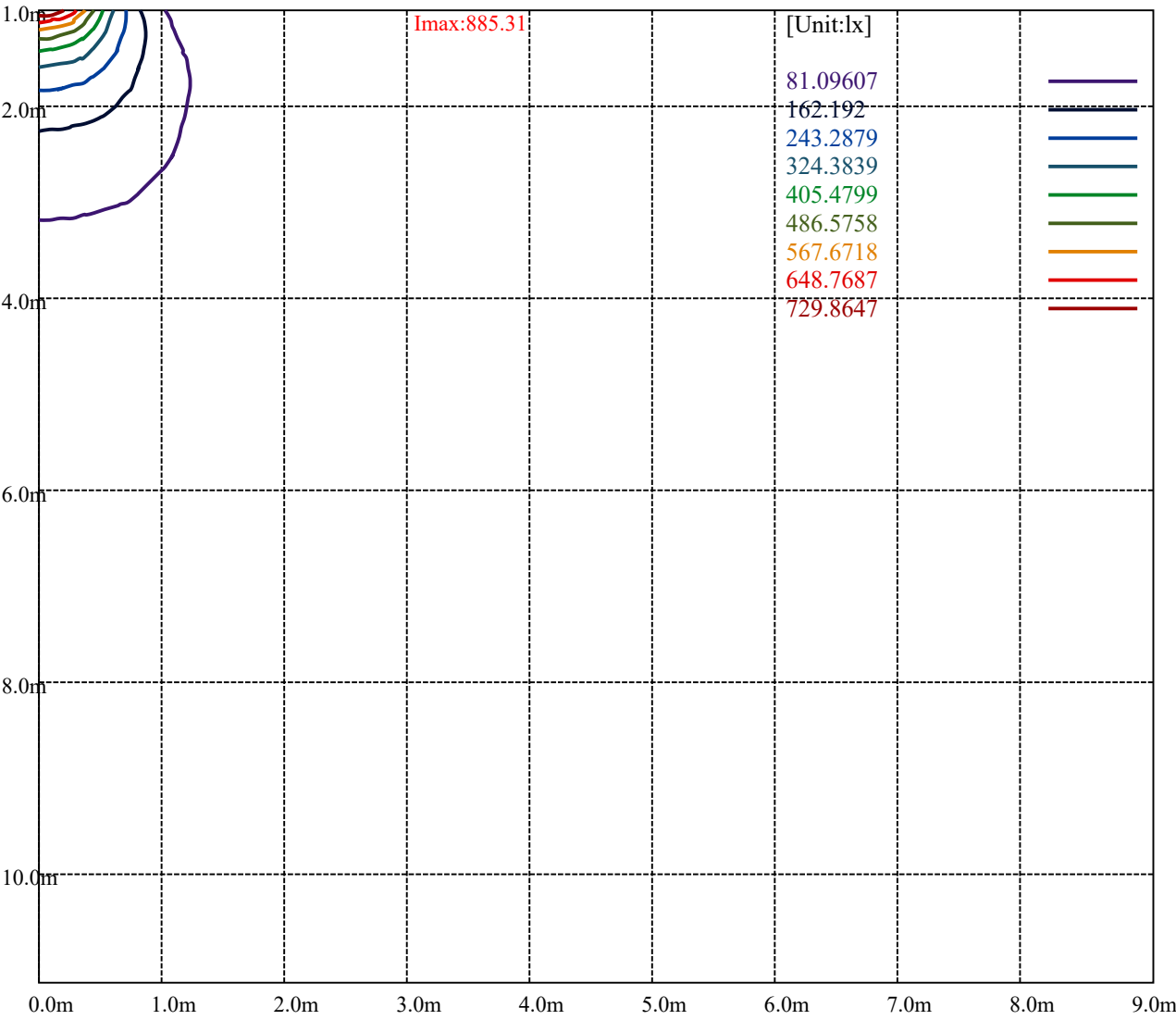
(50%Emax) 45.09177

(60%Emax) 54.11006

(70%Emax) 63.12846

(80%Emax) 72.14675

(90%Emax) 81.16515



Luminance Table

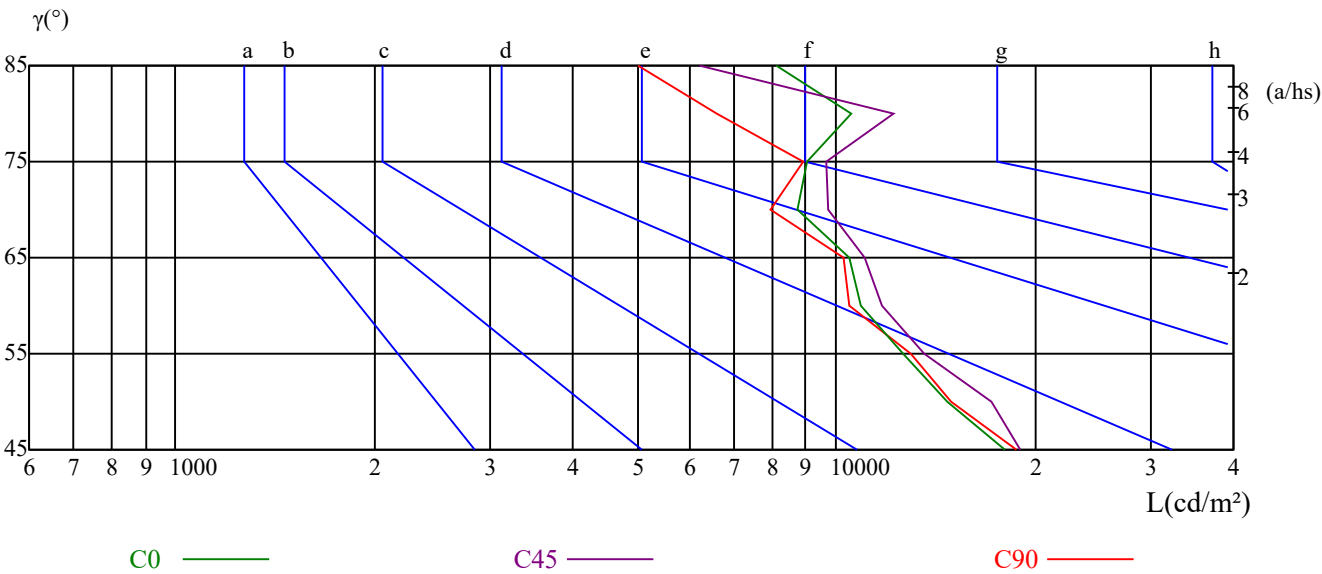
γ	45	50	55	60	65	70	75	80	85
C0	18051	14708	12665	10897	10484	8737	9057	10533	8128
C45	19017	17173	13631	11772	11063	9716	9654	12239	6207
C90	18780	14908	13002	10459	10301	7984	8908	6602	5025

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
10499	10713	10903	9032	9132	10227	8645	7168	5357

Glare Table

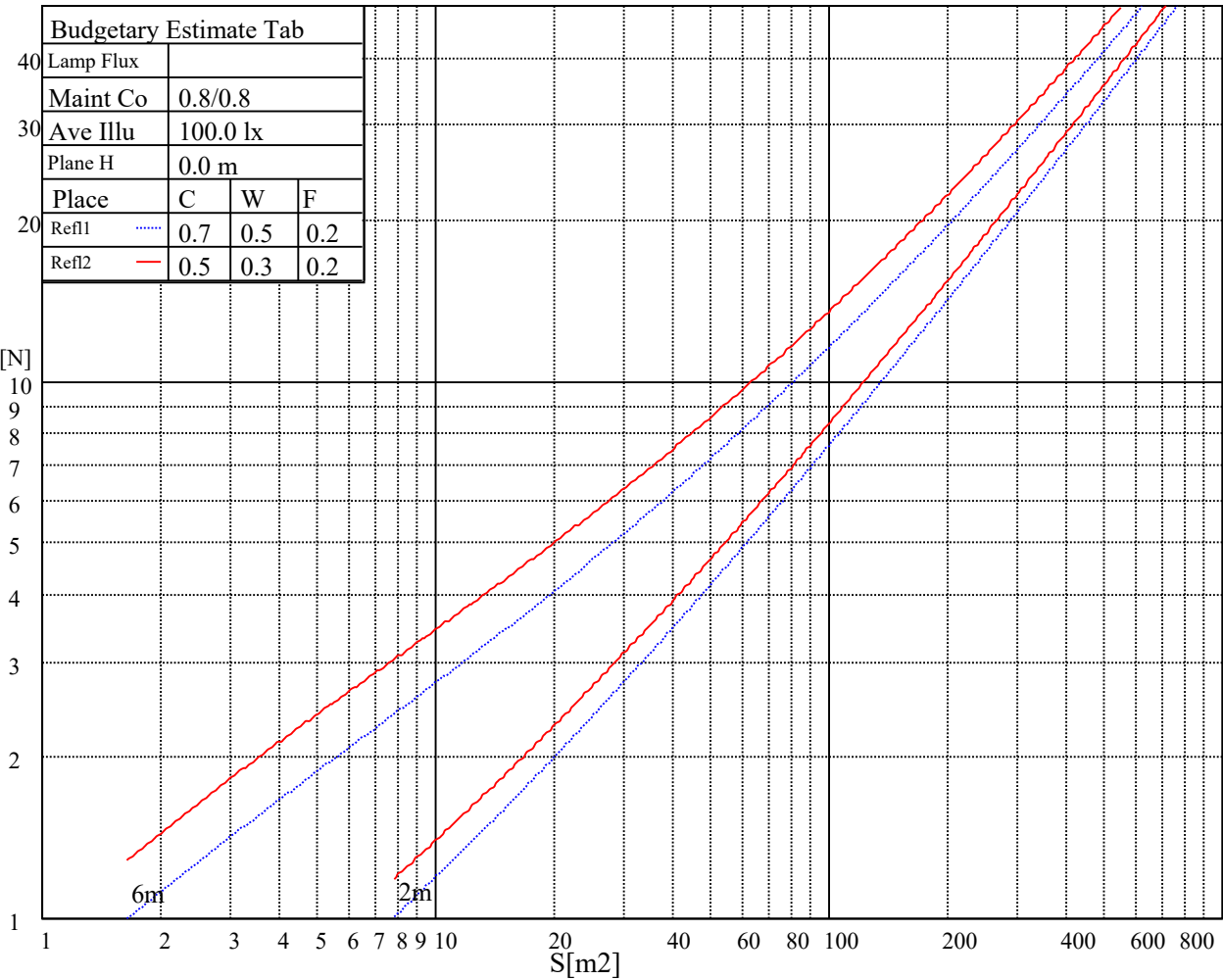
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve

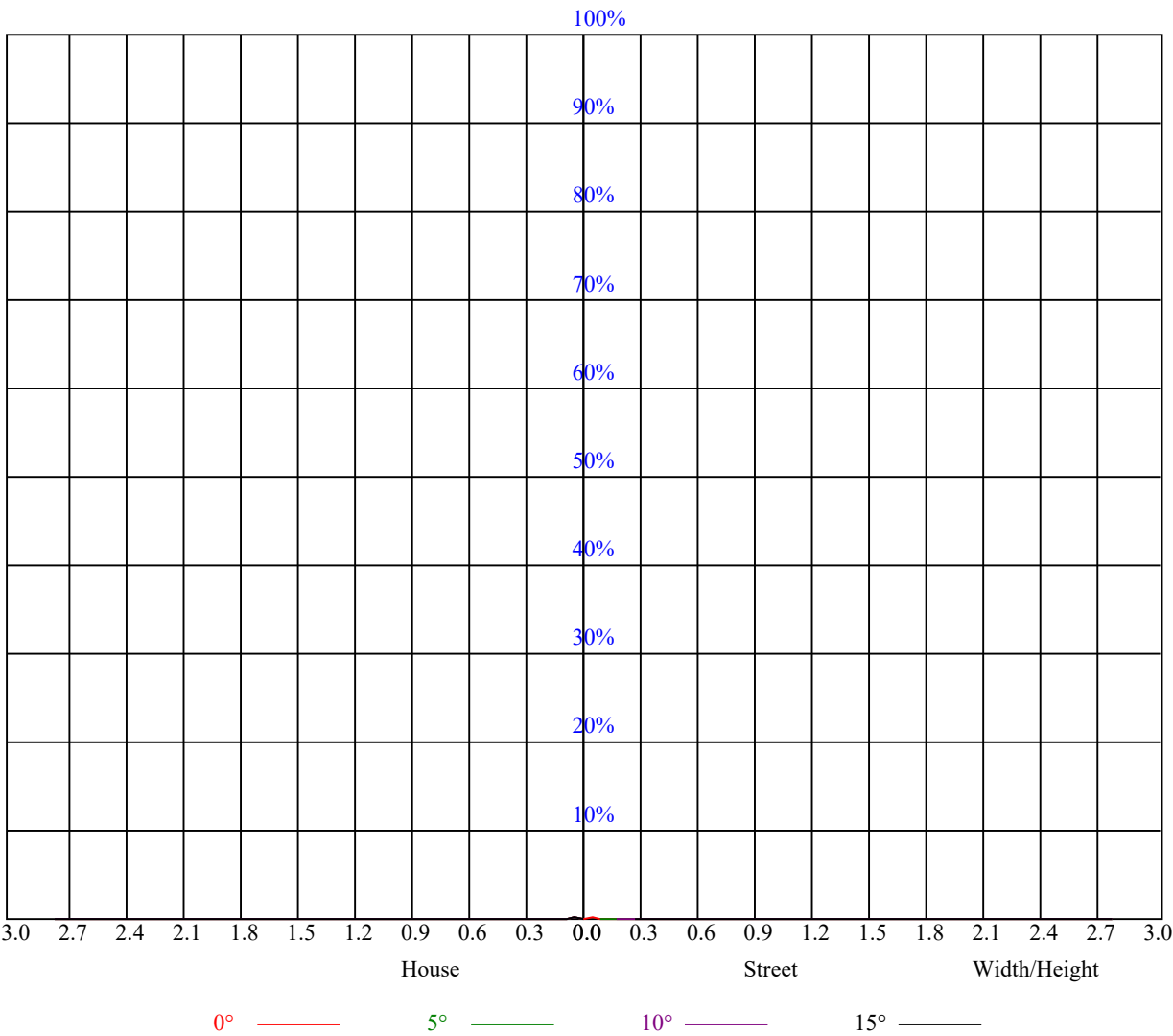


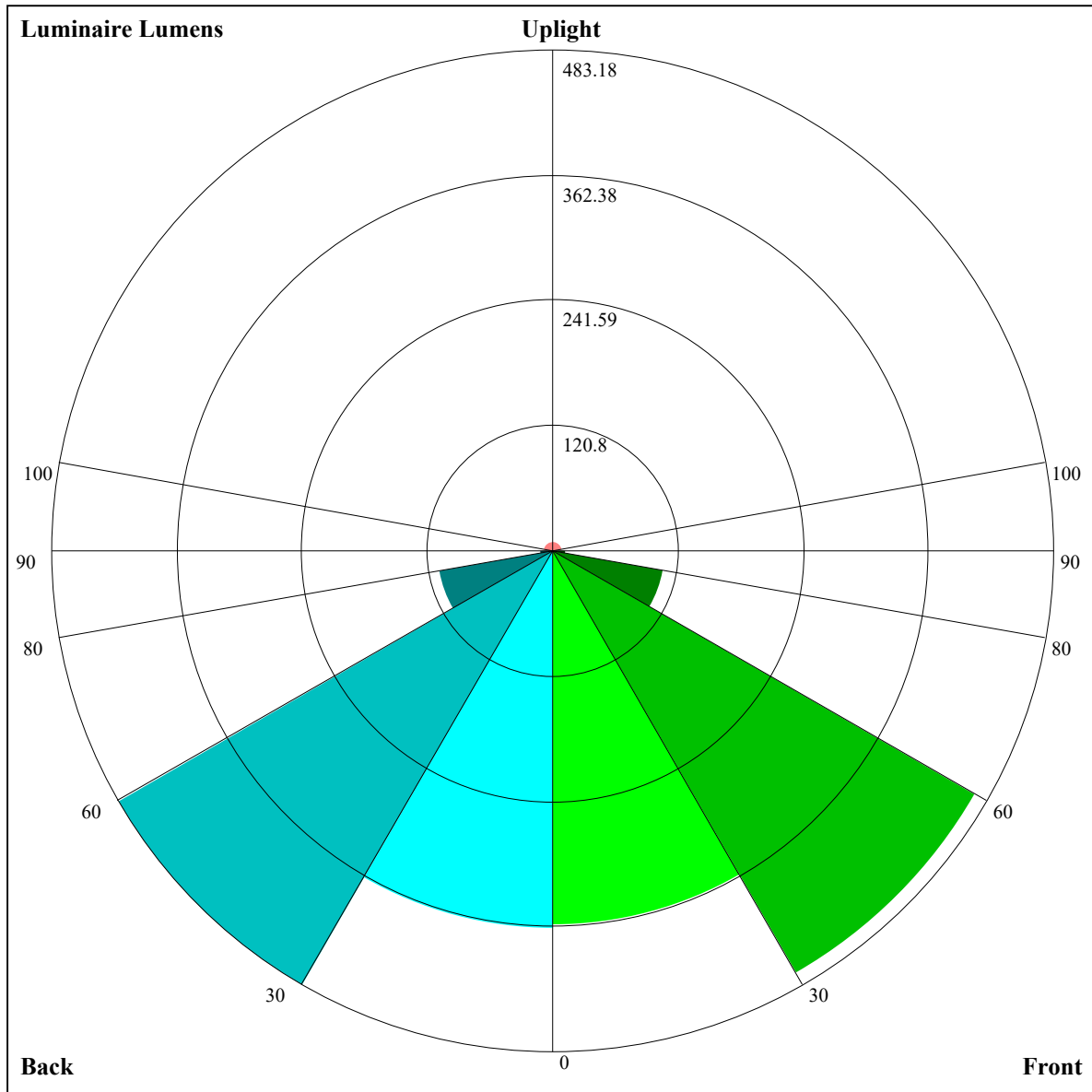
Illumination assessment according UGR											
Rf of Ceiling		70	70	50	50	30	70	70	50	50	30
Rf of Wall		50	30	50	30	30	50	30	50	30	30
Rf of Floor		20	20	20	20	20	20	20	20	20	20
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	16.34	17.79	16.71	18.11	18.44	16.50	17.95	16.87	18.28	18.60
	3H	17.43	18.73	17.82	19.08	19.43	17.51	18.82	17.90	19.17	19.52
	4H	17.90	19.12	18.30	19.48	19.86	17.91	19.13	18.32	19.50	19.87
	6H	18.39	19.52	18.80	19.90	20.30	18.25	19.37	18.66	19.75	20.16
	8H	18.55	19.64	18.97	20.03	20.44	18.30	19.39	18.73	19.78	20.19
	12H	18.63	19.67	19.06	20.07	20.49	18.31	19.35	18.74	19.75	20.17
4H	2H	16.81	18.03	17.21	18.39	18.76	16.95	18.17	17.36	18.54	18.91
	3H	18.13	19.16	18.55	19.55	19.98	18.16	19.19	18.59	19.59	20.01
	4H	18.79	19.69	19.23	20.12	20.57	18.73	19.64	19.18	20.07	20.52
	6H	19.35	20.15	19.82	20.61	21.06	19.19	20.00	19.66	20.45	20.91
	8H	19.58	20.33	20.06	20.79	21.26	19.33	20.09	19.82	20.54	21.02
	12H	19.71	20.41	20.20	20.86	21.38	19.39	20.09	19.88	20.54	21.06
8H	4H	19.04	19.79	19.52	20.25	20.72	19.00	19.75	19.48	20.21	20.68
	6H	19.74	20.37	20.25	20.85	21.36	19.67	20.30	20.17	20.77	21.28
	8H	20.07	20.61	20.59	21.13	21.63	19.94	20.49	20.46	21.01	21.51
	12H	20.22	20.68	20.75	21.20	21.72	20.03	20.49	20.56	21.01	21.53
12H	4H	19.08	19.78	19.57	20.23	20.75	19.03	19.73	19.52	20.18	20.70
	6H	19.88	20.43	20.41	20.95	21.45	19.80	20.35	20.32	20.87	21.37
	8H	20.19	20.65	20.72	21.17	21.69	20.07	20.53	20.60	21.05	21.57
Variation with the observer position at spacings:											
S = 1.0H		0.4/-0.7					0.3/-0.6				
S = 1.5H		0.9/-1.2					0.7/-1.1				
S = 2.0H		1.5/-1.3					1.4/-1.2				
Standard tables:		BK3					BK3				
Uncorrected UGR		5.4					5.4				

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



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 RHOF=20 CU															
0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1	1.06	1.02	0.99	1.04	1.00	0.97	0.99	0.97	0.94	0.96	0.93	0.91	0.92	0.90	0.88	0.86
2	0.94	0.88	0.83	0.92	0.87	0.82	0.89	0.84	0.80	0.86	0.82	0.79	0.83	0.80	0.77	0.75
3	0.84	0.77	0.72	0.83	0.76	0.71	0.80	0.74	0.70	0.77	0.72	0.68	0.75	0.71	0.67	0.65
4	0.76	0.68	0.62	0.75	0.67	0.62	0.72	0.66	0.61	0.70	0.65	0.60	0.68	0.63	0.59	0.57
5	0.69	0.61	0.55	0.68	0.60	0.55	0.66	0.59	0.54	0.64	0.58	0.53	0.62	0.57	0.53	0.51
6	0.63	0.55	0.49	0.62	0.54	0.49	0.60	0.53	0.48	0.58	0.52	0.48	0.57	0.51	0.47	0.45
7	0.57	0.49	0.44	0.57	0.49	0.44	0.55	0.48	0.43	0.54	0.48	0.43	0.52	0.47	0.43	0.41
8	0.53	0.45	0.40	0.52	0.45	0.40	0.51	0.44	0.39	0.50	0.44	0.39	0.49	0.43	0.39	0.37
9	0.49	0.41	0.36	0.48	0.41	0.36	0.47	0.40	0.36	0.46	0.40	0.36	0.45	0.40	0.35	0.34
10	0.45	0.38	0.33	0.45	0.38	0.33	0.44	0.37	0.33	0.43	0.37	0.33	0.42	0.37	0.33	0.31





Luminaire Lumens:

FL=360.73,FM=470.48,FH=108.55,FVH=12.04

BL=364.03,BM=483.18,BH=112.44,BVH=12.68

UL=0.75,UH=8.58

BUG Rating:B1-U1-G1

Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	874.12	868.90	861.44	859.20	805.88	755.53	661.93	588.09	499.34
22.5	875.24	870.39	859.58	848.76	817.81	768.96	670.51	579.51	498.22
45.0	874.87	885.31	871.88	858.08	824.90	763.74	680.20	592.57	490.76
67.5	870.02	871.88	870.76	864.80	818.56	757.40	678.34	580.26	496.35
90.0	865.54	864.80	861.81	847.64	816.32	743.97	669.39	589.21	490.39
112.5	865.54	856.22	864.05	850.63	808.49	773.81	670.13	600.03	502.69
135.0	876.36	870.02	865.92	856.22	823.40	765.23	692.88	598.53	503.44
157.5	868.90	868.15	867.78	850.63	828.62	761.50	697.36	625.38	519.85
180.0	874.12	862.93	864.80	853.61	828.25	780.89	709.29	617.93	517.24
202.5	875.24	884.94	878.97	865.92	847.64	786.11	692.14	608.98	515.00
225.0	874.87	883.07	873.37	857.34	828.62	784.62	694.37	607.86	518.73
247.5	870.02	872.63	865.54	856.59	823.78	772.31	702.20	610.84	520.22
270.0	865.54	867.41	874.87	850.25	827.88	770.82	692.14	597.79	507.91
292.5	865.54	871.88	868.53	851.00	821.91	754.79	690.64	614.57	515.00
315.0	876.36	877.10	875.61	859.58	819.67	757.40	683.93	601.14	500.83
337.5	868.90	869.65	860.32	842.80	808.49	758.14	676.10	597.04	496.35
360.0	874.12	868.90	861.44	859.20	805.88	755.53	661.93	588.09	499.34
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	369.56	273.72	210.33	157.74	128.28	86.52	67.87	52.95	20.51
22.5	359.49	283.79	218.90	150.66	116.35	108.52	71.23	43.63	10.07
45.0	389.33	319.59	226.36	170.42	135.37	96.21	72.35	61.53	15.66
67.5	392.31	309.90	219.28	152.90	137.23	97.70	64.14	53.33	11.93
90.0	384.48	277.45	215.92	151.41	126.05	79.06	66.75	33.19	12.68
112.5	388.95	284.54	224.50	139.47	119.71	92.48	68.24	36.92	10.07
135.0	404.62	319.59	240.91	170.80	128.66	98.08	86.14	54.82	4.10
157.5	413.57	332.27	233.45	176.02	141.71	97.33	83.16	52.95	39.90
180.0	395.67	290.88	241.65	174.15	128.66	94.35	67.50	41.02	23.12
202.5	397.16	300.57	225.24	164.46	131.27	96.59	83.53	54.45	10.81
225.0	415.43	327.05	234.94	180.87	145.81	101.43	80.92	60.04	16.41
247.5	422.52	328.91	240.16	158.86	143.95	93.98	81.30	52.58	34.68
270.0	396.79	300.57	224.87	166.69	136.11	110.38	70.11	40.65	23.49
292.5	404.62	293.49	229.72	154.39	111.13	84.28	79.43	46.61	29.09
315.0	407.60	325.93	219.65	165.58	123.81	100.69	67.13	54.82	17.90
337.5	391.56	316.23	223.00	179.00	127.16	96.21	79.06	45.87	7.83
360.0	369.56	273.72	210.33	157.74	128.28	86.52	67.87	52.95	20.51
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	0.00	2.24	0.37	0.00	0.75	0.00	0.00	0.00	0.00
22.5	5.59	0.00	0.00	0.00	2.98	0.00	0.00	12.68	1.49
45.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.58	0.75
67.5	2.98	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00
90.0	0.00	0.00	0.00	0.00	0.00	0.00	1.49	0.00	0.00
112.5	0.00	0.00	3.73	0.00	0.00	4.10	0.00	0.75	10.44
135.0	0.00	0.00	0.75	0.00	2.61	2.98	0.00	0.00	0.00
157.5	0.00	0.00	0.00	0.00	0.00	0.00	5.22	8.20	1.86
180.0	0.00	3.73	0.00	1.86	0.00	0.00	0.00	9.32	0.00
202.5	0.00	0.00	0.00	10.07	0.00	0.00	5.22	0.00	10.07
225.0	1.49	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00
247.5	0.00	0.00	0.00	0.00	0.00	6.34	0.00	0.00	0.00
270.0	0.00	0.00	0.00	0.00	3.36	0.00	0.00	7.46	0.00
292.5	0.00	0.00	2.61	3.36	0.00	0.00	0.00	0.00	0.00
315.0	0.00	3.73	0.00	6.71	0.00	7.09	0.00	0.00	0.00
337.5	0.00	0.00	3.73	0.00	0.00	4.10	0.00	1.86	8.58
360.0	0.00	2.24	0.37	0.00	0.75	0.00	0.00	0.00	0.00

Intensity data(cd)

Appendix Page: 17 Total:17

C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	3.36	2.24	0.00	13.43	0.00	2.24	0.00	0.00	3.73
22.5	10.44	0.00	5.97	0.00	0.00	0.00	6.71	0.00	0.00
45.0	4.85	0.00	0.00	0.00	0.00	3.73	0.00	2.98	0.00
67.5	10.07	0.00	0.00	1.12	0.00	0.00	7.83	3.36	13.43
90.0	0.75	0.37	0.00	0.00	1.12	0.00	0.00	1.86	9.70
112.5	0.00	0.00	0.00	2.98	0.00	2.98	0.00	1.86	0.00
135.0	0.00	1.12	7.09	0.00	0.00	0.00	0.00	0.00	2.61
157.5	0.00	0.00	1.86	0.00	0.00	0.00	0.00	0.00	6.34
180.0	0.00	0.00	1.12	0.00	0.00	0.00	0.00	2.24	3.73
202.5	5.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.22
225.0	0.00	0.00	0.00	0.75	3.73	0.00	13.05	0.00	0.00
247.5	4.85	0.00	0.00	0.00	0.00	0.37	2.61	8.95	0.00
270.0	0.00	0.00	0.00	0.00	0.00	21.26	0.00	0.00	0.00
292.5	0.37	0.00	7.09	0.37	0.00	7.46	0.00	0.00	15.66
315.0	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.86	0.00
337.5	0.00	9.32	0.00	0.00	3.73	7.83	0.00	0.00	3.73
360.0	3.36	2.24	0.00	13.43	0.00	2.24	0.00	0.00	3.73

C/γ(°)	180.0
0.0	0.00
22.5	0.00
45.0	0.00
67.5	0.00
90.0	10.81
112.5	0.00
135.0	0.00
157.5	0.00
180.0	0.00
202.5	0.00
225.0	0.00
247.5	0.00
270.0	10.81
292.5	0.00
315.0	0.00
337.5	0.00
360.0	0.00