



SGSO

Address: LIT by CARDI

Client:

LumCAT: 0017440221 RIO 18W 3000K 1800lm

Luminaire:

Report No:

Voltage(V): 230.0000

Test No: KYZ-A251030009-02-003

Current(A): 0.0810

LampCAT: LED

Power (W): 18.0000

Lamp flux(lm)

PF: 0.9617

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): 100.00

Central intensity(cd): 922.726

Maximum intensity(cd): 923.495

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

Beam Angle(50%Imax): [C0/180]Total=84.4

[C90/270]Total=84.2

Field angle(10%Imax): [C0/180]Total=142.5

[C90/270]Total=142.4

Maximum s/h(1/2): C0_180=1.11 C90_270=1.15

Maximum s/h(1/4): C0_180=1.16 C90_270=1.19

Up flux rate of LUM(%): 0.50%

Down flux rate of LUM(%): 99.50%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 87.182%

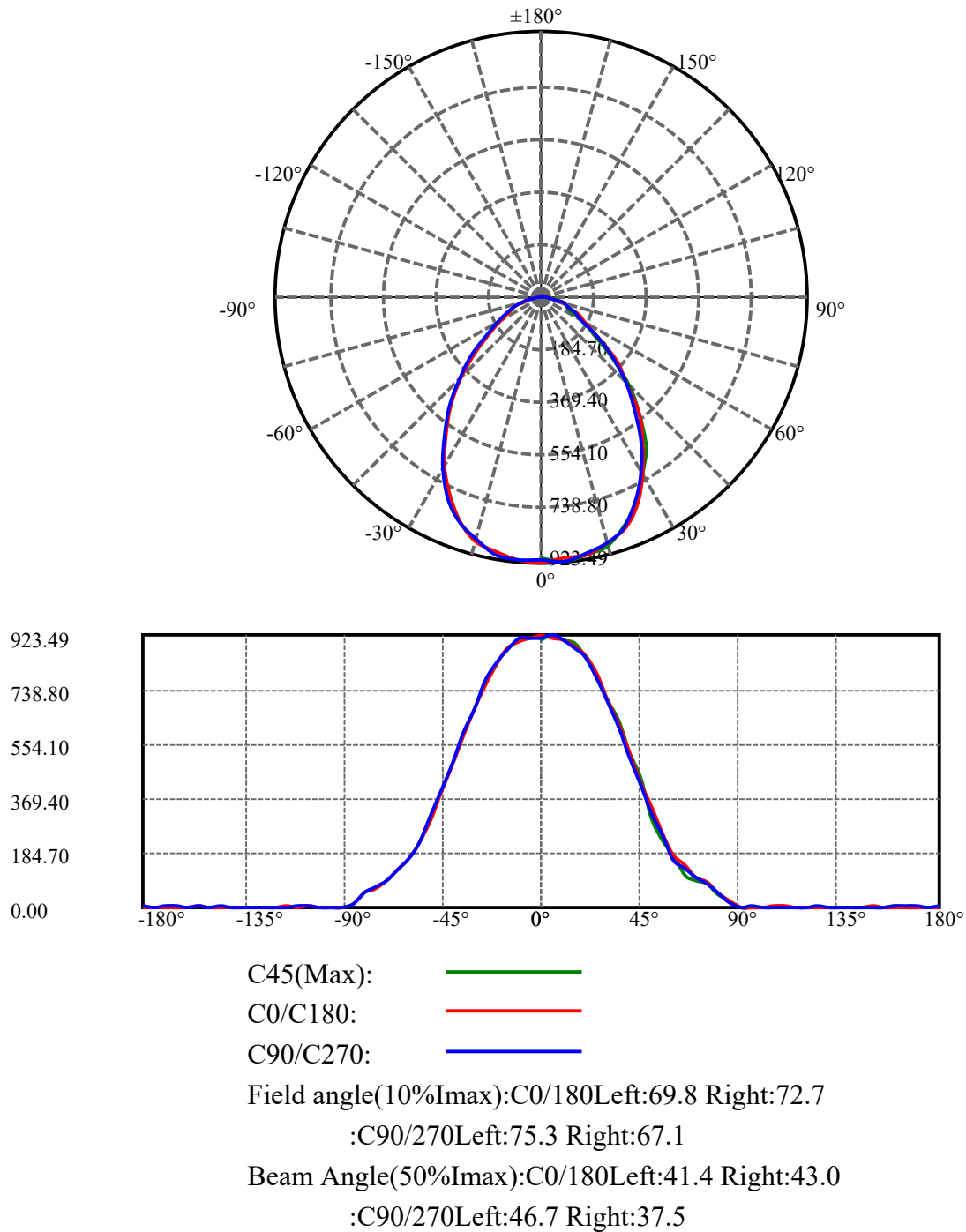
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1014.224	0.000	0	.000%	.000%
5.0	1013.585	21.889	21.889	1.216%	1.216%
10.0	1000.049	65.043	86.933	3.614%	4.830%
15.0	969.140	105.475	192.407	5.860%	10.689%
20.0	925.016	140.955	333.363	7.831%	18.520%
25.0	852.115	168.300	501.662	9.350%	27.870%
30.0	761.521	184.389	686.052	10.244%	38.114%
35.0	664.905	189.666	875.718	10.537%	48.651%
40.0	556.352	183.983	1059.701	10.221%	58.872%
45.0	443.377	167.144	1226.845	9.286%	68.158%
50.0	331.786	141.432	1368.277	7.857%	76.015%
55.0	243.378	112.923	1481.2	6.273%	82.289%
60.0	178.630	88.079	1569.279	4.893%	87.182%
65.0	134.505	68.736	1638.015	3.819%	91.001%
70.0	103.543	54.426	1692.441	3.024%	94.024%
75.0	79.510	43.204	1735.645	2.400%	96.425%
80.0	55.049	32.510	1768.155	1.806%	98.231%
85.0	18.758	18.109	1786.264	1.006%	99.237%
90.0	0.320	4.717	1790.981	.262%	99.499%
95.0	0.959	0.316	1791.297	.018%	99.516%
100.0	1.332	0.562	1791.859	.031%	99.548%
105.0	3.624	1.197	1793.056	.067%	99.614%
110.0	3.144	1.597	1794.654	.089%	99.703%
115.0	1.492	1.060	1795.714	.059%	99.762%
120.0	0.000	0.328	1796.041	.018%	99.780%
125.0	1.546	0.323	1796.364	.018%	99.798%
130.0	0.426	0.387	1796.751	.022%	99.819%
135.0	0.959	0.253	1797.004	.014%	99.833%
140.0	0.586	0.258	1797.262	.014%	99.848%
145.0	3.944	0.682	1797.945	.038%	99.886%
150.0	1.013	0.659	1798.604	.037%	99.922%
155.0	1.865	0.329	1798.932	.018%	99.941%
160.0	1.865	0.353	1799.286	.020%	99.960%
165.0	2.025	0.289	1799.575	.016%	99.976%
170.0	3.517	0.297	1799.872	.016%	99.993%
175.0	0.000	0.114	1799.986	.006%	99.999%
180.0	1.599	0.017	1800.003	.001%	100.000%

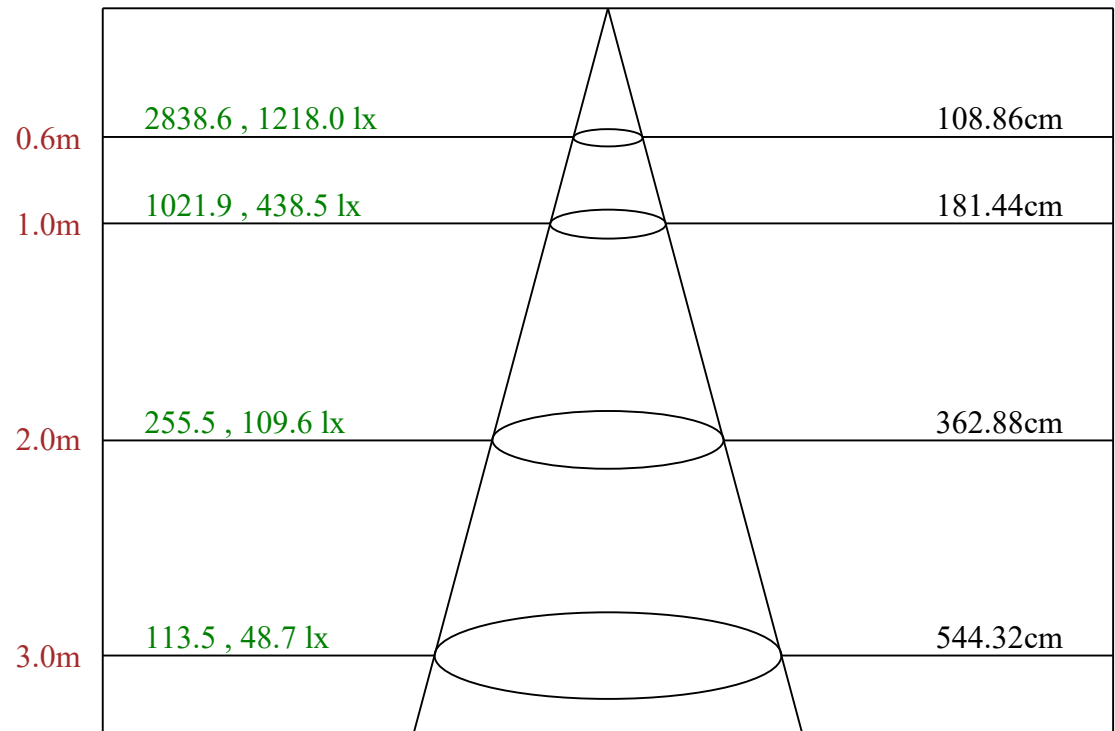
ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixt
0-30	686.05	38.11%
0-40	1059.70	58.87%
0-60	1569.28	87.18%
0-90	1790.98	99.50%
0-120	1796.04	99.78%
0-180	1800.00	100.00%
60-90	309.78	17.21%
90-120	9.78	0.54%
90-130	10.49	0.58%
90-150	12.34	0.69%
90-180	13.72	0.76%
0-53.18	1440.00	80.00%

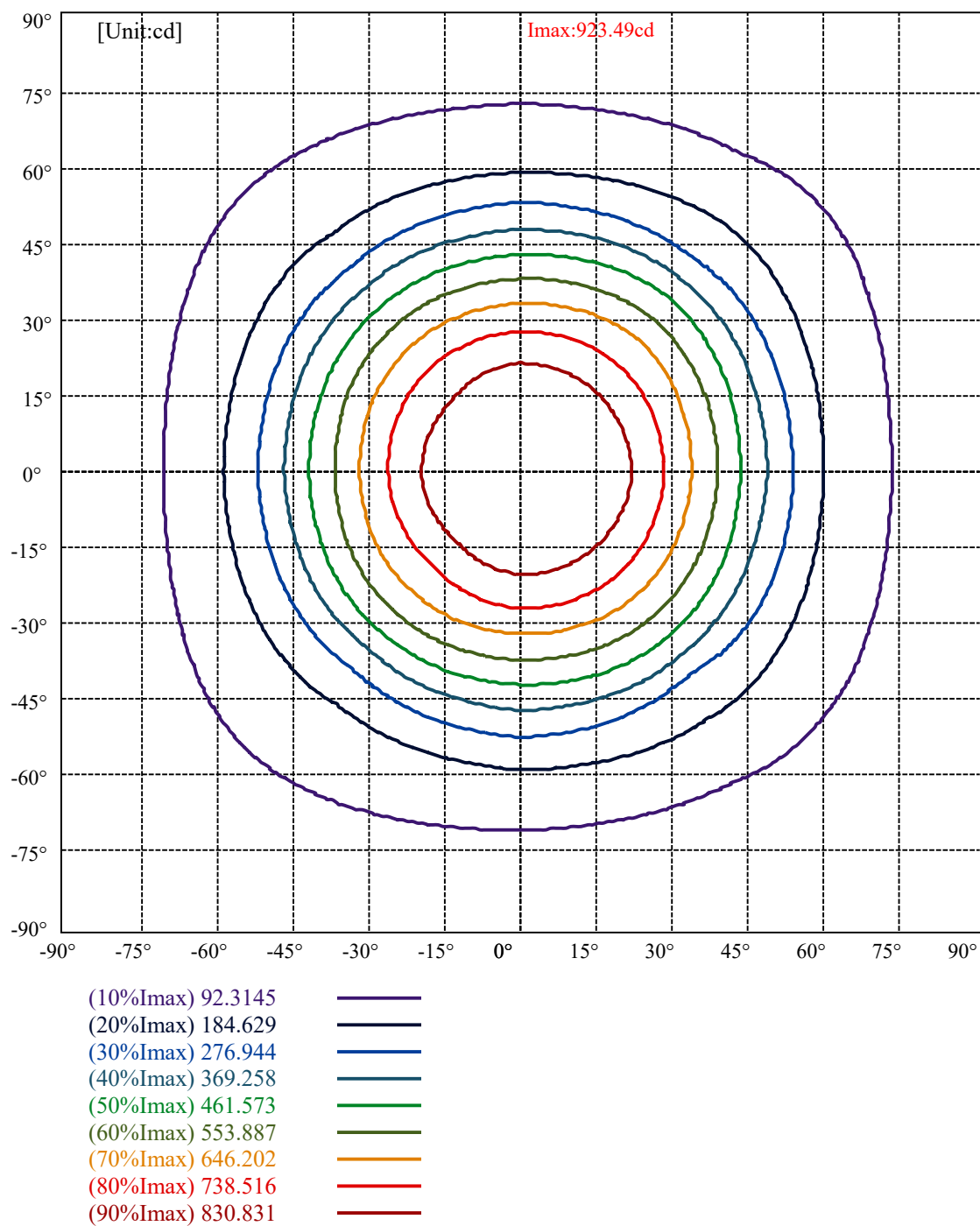
ZONAL LUMEN SUMMARY

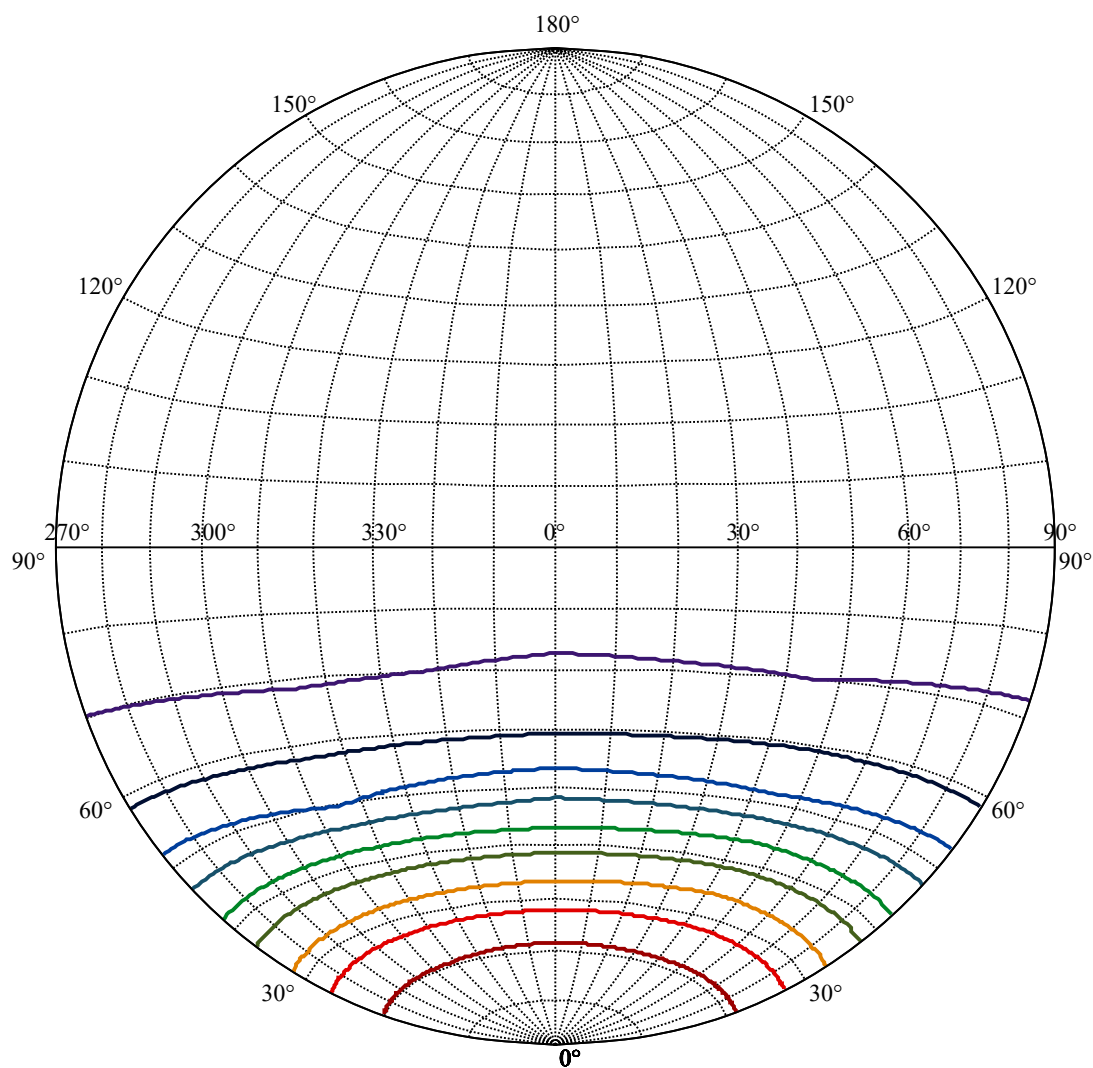
0-10	86.93
10-20	246.43
20-30	352.69
30-40	373.65
40-50	308.58
50-60	201.00
60-70	123.16
70-80	75.71
80-90	22.83
90-100	0.88
100-110	2.79
110-120	1.39
120-130	0.71
130-140	0.51
140-150	1.34
150-160	0.68
160-170	0.59
170-180	0.11





Max , Ave Beam angle of C45 plane 84.43



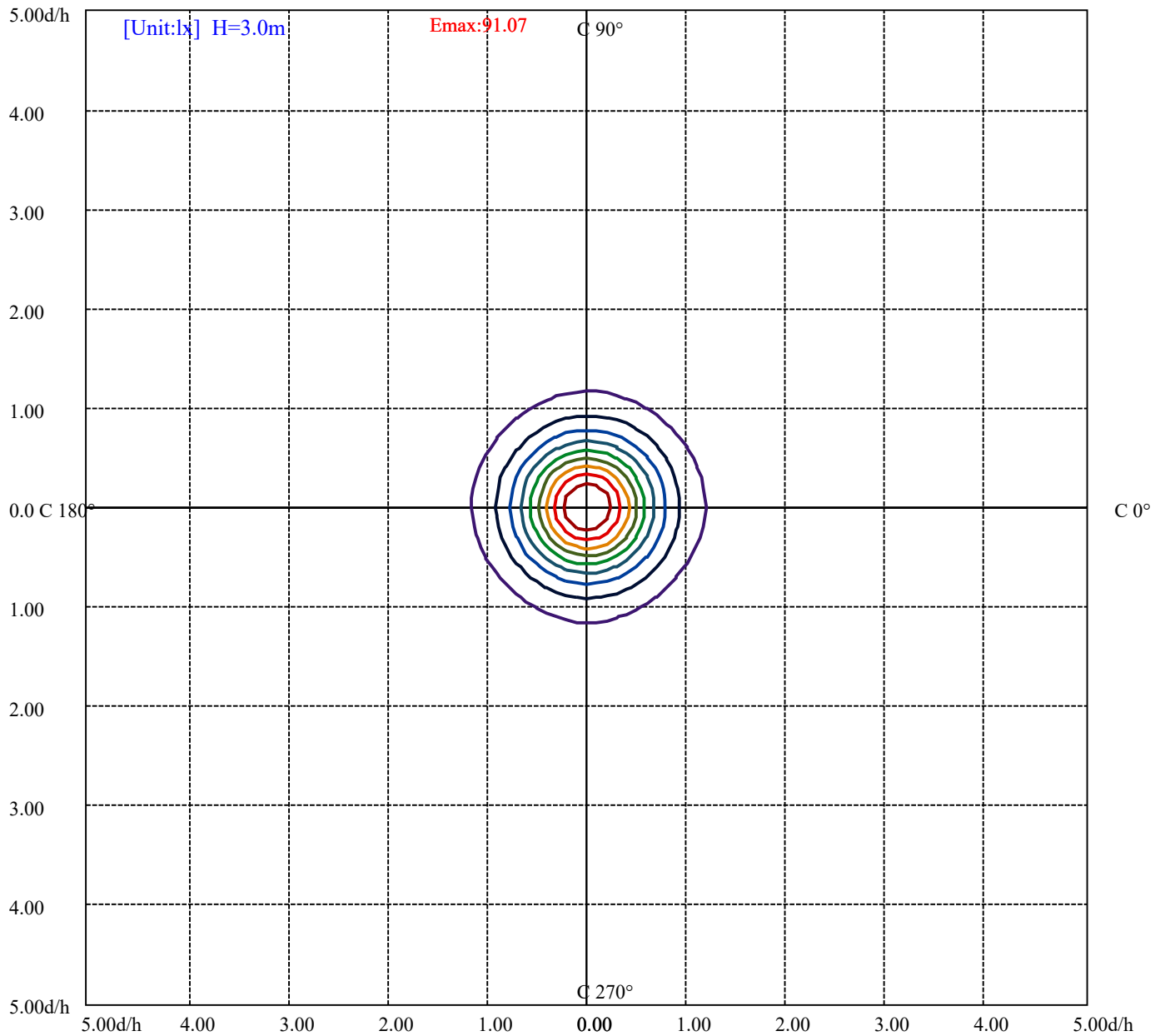


House

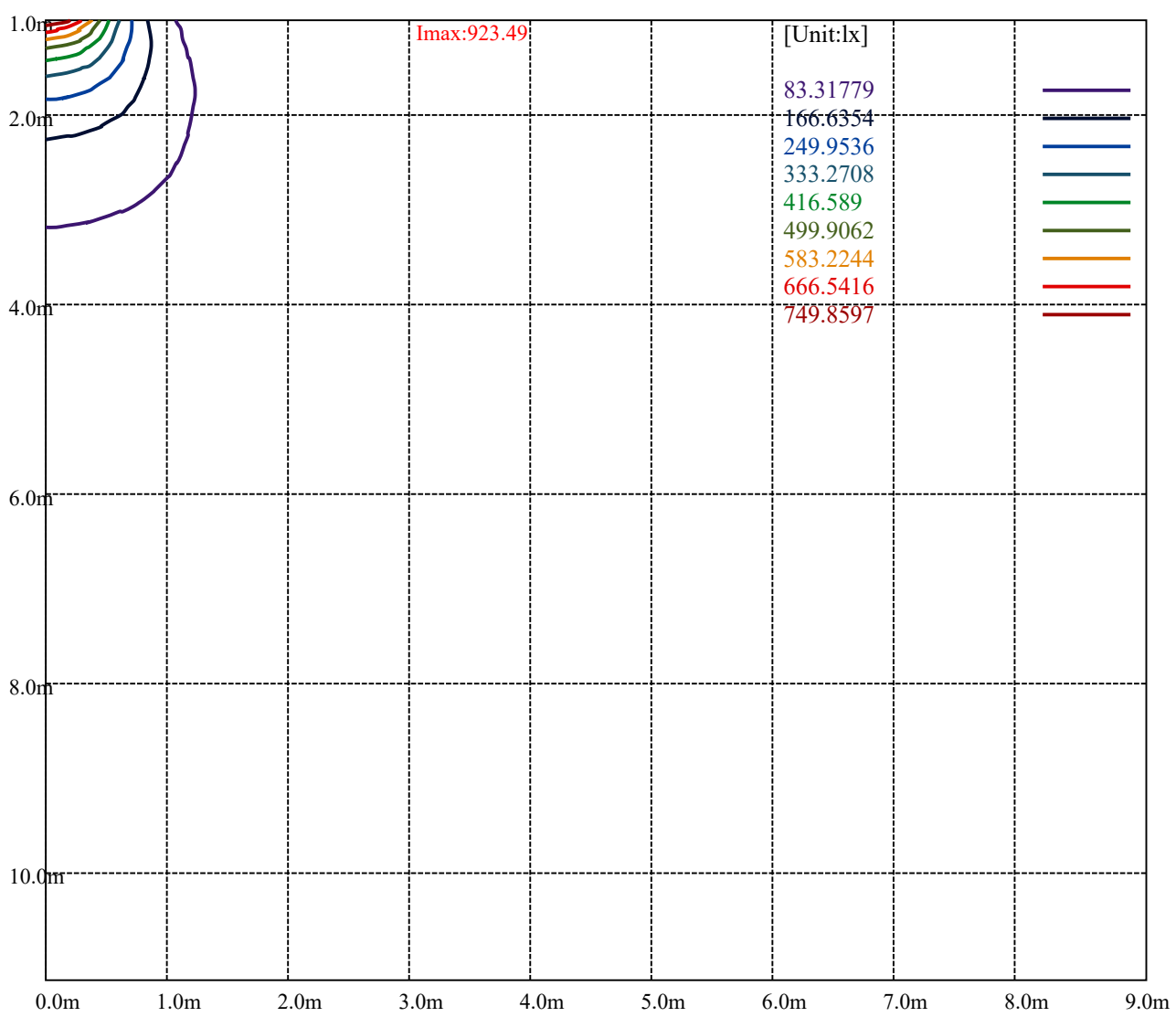
[Unit:cd]

Road

I_{max}:923.49(10%I_{max}) 83.38723(20%I_{max}) 166.7745(30%I_{max}) 250.1612(40%I_{max}) 333.5489(50%I_{max}) 416.9357(60%I_{max}) 500.3234(70%I_{max}) 583.7101(80%I_{max}) 667.0978(90%I_{max}) 750.4846



(10%Emax)	9.10691	—
(20%Emax)	18.21386	—
(30%Emax)	27.32074	—
(40%Emax)	36.42762	—
(50%Emax)	45.5346	—
(60%Emax)	54.64148	—
(70%Emax)	63.74835	—
(80%Emax)	72.85524	—
(90%Emax)	81.96222	—



Luminance Table

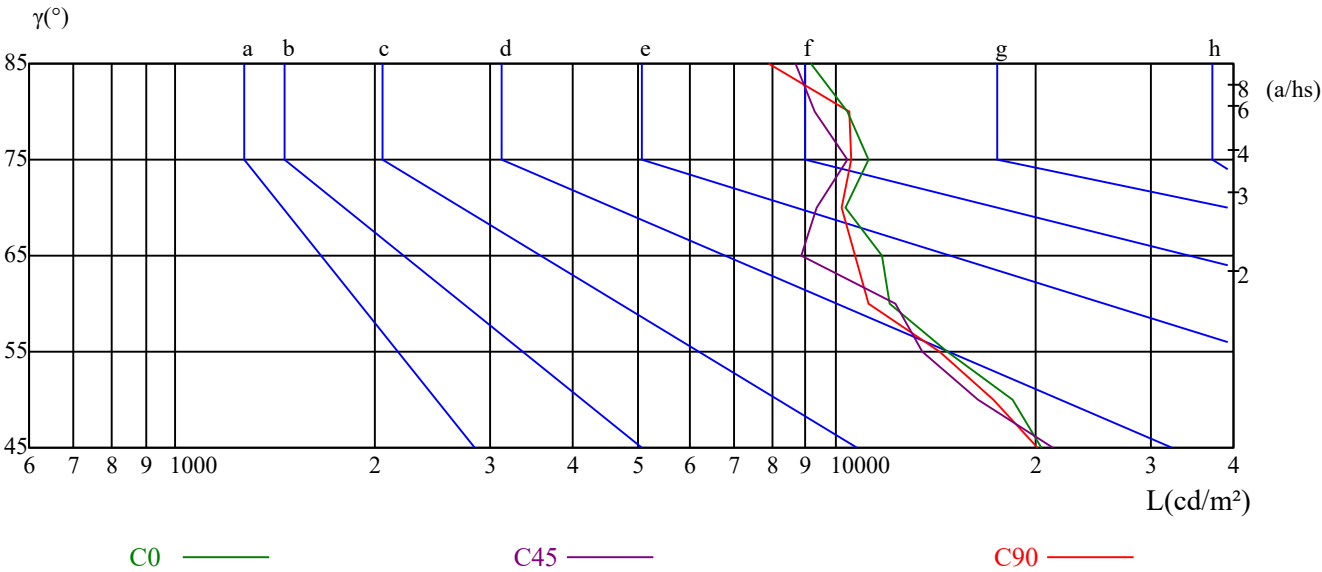
γ	45	50	55	60	65	70	75	80	85
C0	20420	18513	14789	12099	11766	10341	11199	10413	9153
C45	21304	16382	13537	12338	8872	9330	10428	9265	8695
C90	20157	17292	14395	11222	10697	10224	10582	10490	7933

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
11043	10602	9029	9812	9760	9375	7170	6484	6598

Glare Table

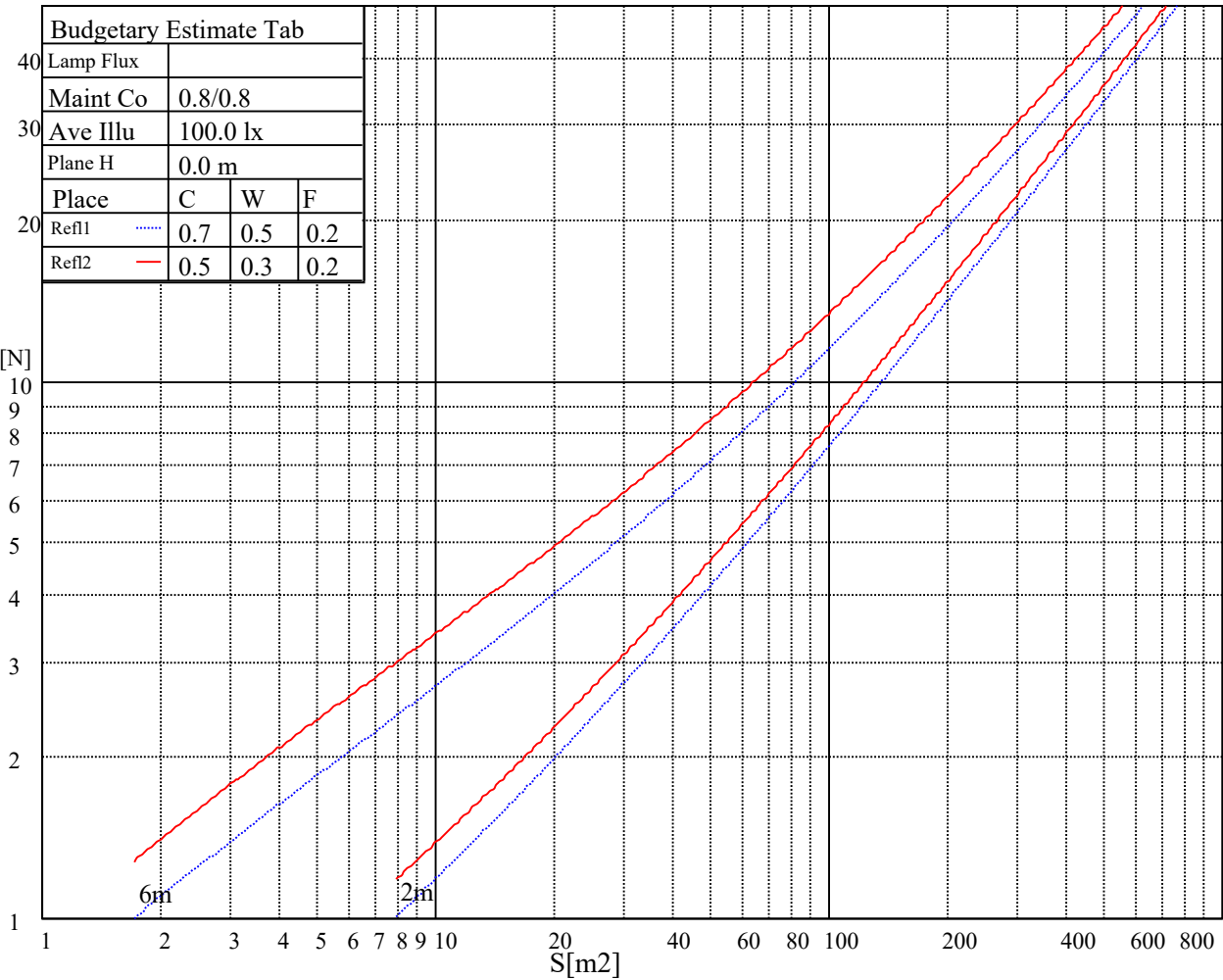
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve

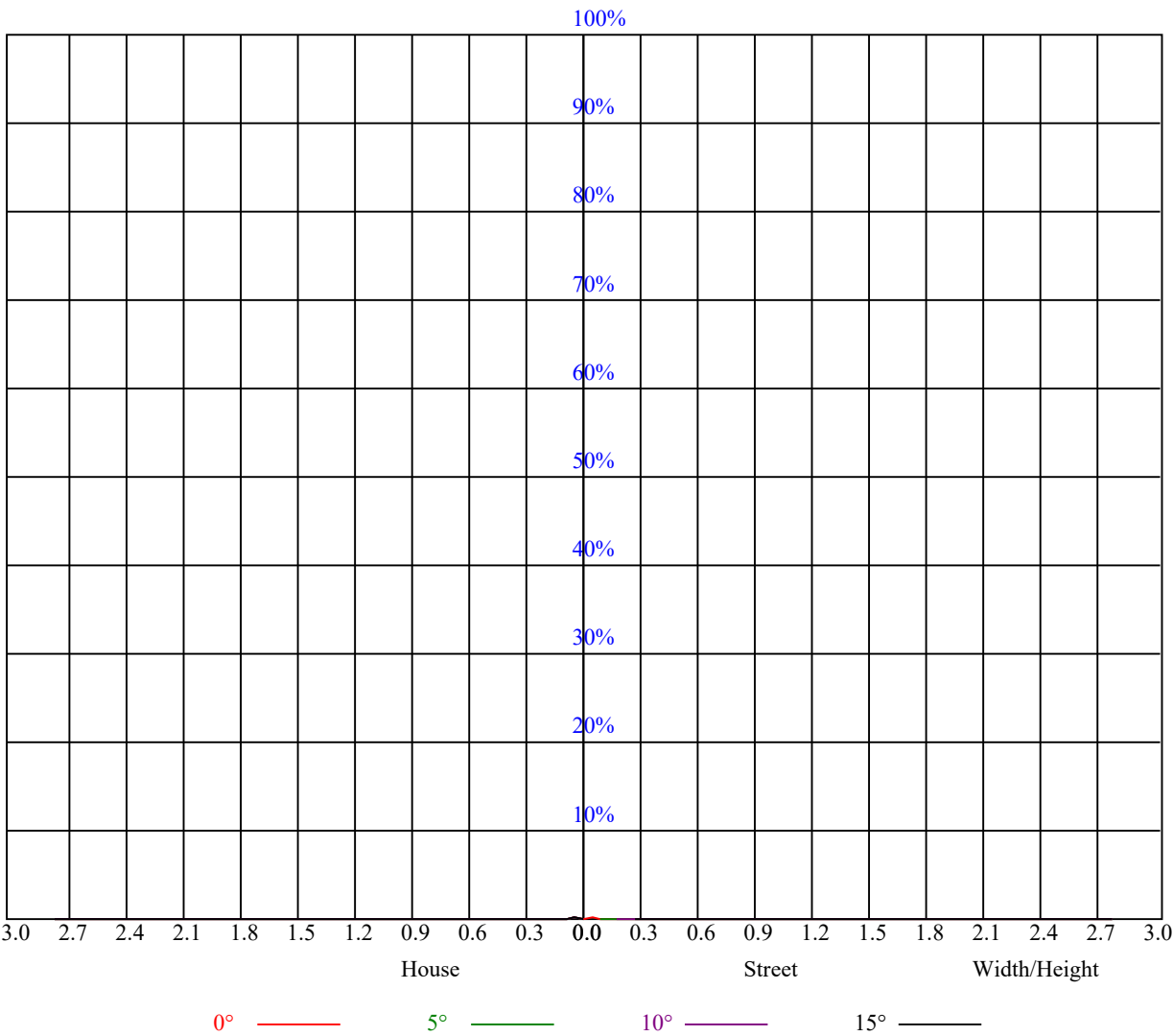


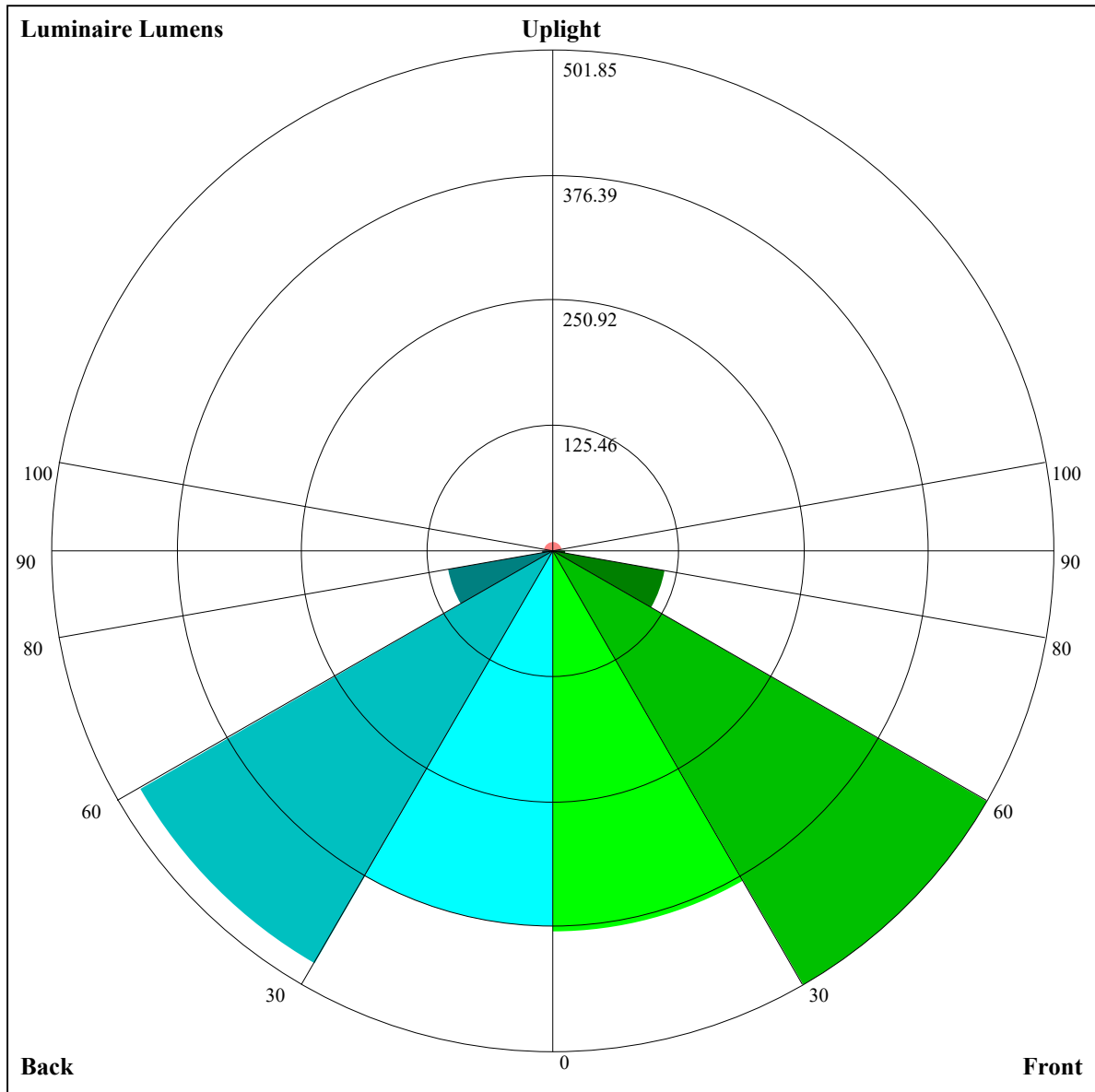
Illumination assessment according UGR											
Rf of Ceiling		70	70	50	50	30	70	70	50	50	30
Rf of Wall		50	30	50	30	30	50	30	50	30	30
Rf of Floor		20	20	20	20	20	20	20	20	20	20
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	17.26	18.70	17.63	19.03	19.35	17.07	18.51	17.44	18.83	19.16
	3H	18.27	19.57	18.66	19.91	20.27	18.05	19.34	18.44	19.69	20.05
	4H	18.80	20.01	19.21	20.38	20.75	18.58	19.79	18.98	20.15	20.52
	6H	19.28	20.40	19.70	20.78	21.19	19.07	20.19	19.48	20.57	20.97
	8H	19.42	20.50	19.84	20.89	21.30	19.21	20.29	19.64	20.68	21.10
	12H	19.51	20.54	19.93	20.94	21.36	19.29	20.32	19.71	20.72	21.14
4H	2H	17.57	18.78	17.97	19.14	19.52	17.40	18.61	17.81	18.98	19.35
	3H	18.77	19.80	19.20	20.19	20.62	18.59	19.61	19.01	20.01	20.43
	4H	19.52	20.42	19.96	20.85	21.30	19.33	20.23	19.77	20.65	21.11
	6H	20.11	20.90	20.58	21.36	21.81	19.93	20.73	20.40	21.18	21.64
	8H	20.33	21.08	20.82	21.54	22.01	20.16	20.91	20.65	21.37	21.84
	12H	20.49	21.19	20.98	21.64	22.16	20.30	21.00	20.79	21.45	21.97
8H	4H	19.73	20.47	20.21	20.93	21.41	19.55	20.30	20.04	20.76	21.23
	6H	20.44	21.06	20.94	21.54	22.05	20.28	20.91	20.78	21.39	21.90
	8H	20.79	21.34	21.32	21.86	22.36	20.64	21.19	21.17	21.71	22.21
	12H	21.03	21.48	21.56	22.00	22.52	20.85	21.30	21.38	21.82	22.35
12H	4H	19.75	20.44	20.23	20.89	21.41	19.58	20.27	20.06	20.72	21.24
	6H	20.53	21.07	21.06	21.59	22.10	20.38	20.93	20.91	21.45	21.95
	8H	20.88	21.34	21.42	21.86	22.38	20.74	21.19	21.27	21.71	22.23
Variation with the observer position at spacings:											
S = 1.0H		0.3/-0.6					0.3/-0.6				
S = 1.5H		0.7/-1.2					0.8/-1.1				
S = 2.0H		1.5/-1.2					1.5/-1.1				
Standard tables:		BK3					BK3				
Uncorrected UGR		5.8					5.9				

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	0.99
1	1.06	1.02	0.99	1.04	1.01	0.97	1.00	0.97	0.94	0.96	0.93	0.91	0.92	0.90	0.89	0.87
2	0.95	0.89	0.84	0.93	0.87	0.83	0.89	0.85	0.81	0.86	0.82	0.79	0.83	0.80	0.77	0.75
3	0.85	0.78	0.72	0.83	0.77	0.71	0.80	0.75	0.70	0.78	0.73	0.69	0.75	0.71	0.68	0.66
4	0.76	0.69	0.63	0.75	0.68	0.62	0.73	0.66	0.61	0.70	0.65	0.61	0.68	0.64	0.60	0.58
5	0.69	0.61	0.55	0.68	0.61	0.55	0.66	0.59	0.54	0.64	0.58	0.54	0.62	0.57	0.53	0.51
6	0.63	0.55	0.49	0.62	0.55	0.49	0.60	0.54	0.49	0.59	0.53	0.48	0.57	0.52	0.48	0.46
7	0.58	0.50	0.44	0.57	0.50	0.44	0.56	0.49	0.44	0.54	0.48	0.44	0.53	0.47	0.43	0.41
8	0.53	0.46	0.40	0.53	0.45	0.40	0.51	0.45	0.40	0.50	0.44	0.40	0.49	0.43	0.39	0.38
9	0.49	0.42	0.37	0.49	0.41	0.36	0.48	0.41	0.36	0.47	0.40	0.36	0.46	0.40	0.36	0.34
10	0.46	0.38	0.34	0.45	0.38	0.33	0.44	0.38	0.33	0.43	0.37	0.33	0.42	0.37	0.33	0.31





Luminaire Lumens:

FL=382.75,FM=501.85,FH=113.99,FVH=13.36

BL=376.54,BM=477.47,BH=107.92,BVH=11.95

UL=0.97,UH=9.02

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	922.73	910.79	905.40	883.85	852.66	793.38	704.07	620.15	527.77
45.0	907.71	923.49	905.02	892.31	846.89	784.53	706.77	633.24	528.15
90.0	913.87	921.57	903.48	880.00	849.20	775.29	698.68	608.22	507.75
135.0	918.88	910.02	903.09	868.45	823.02	762.20	682.13	594.36	488.89
180.0	922.73	913.10	898.86	876.15	823.79	752.19	675.20	577.42	486.96
225.0	907.71	919.65	893.08	862.67	816.48	736.02	665.58	576.66	476.95
270.0	913.87	913.10	909.25	871.14	833.03	771.44	676.74	588.20	493.12
315.0	918.88	910.02	905.79	866.14	836.88	780.29	691.76	604.76	509.29
360.0	922.73	910.79	905.40	883.85	852.66	793.38	704.07	620.15	527.77
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	418.06	344.53	245.60	175.15	143.97	102.40	83.92	52.35	23.10
45.0	436.15	304.88	224.81	178.62	108.56	92.39	78.15	46.58	21.94
90.0	412.67	321.82	239.05	162.45	130.88	101.24	79.30	52.74	20.02
135.0	384.56	279.47	202.87	147.44	113.18	93.54	72.37	36.96	23.48
180.0	392.65	300.26	215.96	165.53	126.26	90.85	63.13	53.12	13.09
225.0	357.23	257.92	189.78	136.27	103.17	91.62	59.67	45.42	9.24
270.0	398.42	314.50	219.42	168.22	128.57	93.54	66.98	51.20	12.70
315.0	403.04	273.31	220.58	156.67	117.02	82.38	70.83	59.28	11.93
360.0	418.06	344.53	245.60	175.15	143.97	102.40	83.92	52.35	23.10
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	0.00	0.77	0.00	3.08	7.31	0.00	0.00	0.00	0.00
45.0	1.93	0.00	1.54	0.00	0.00	0.00	0.00	0.00	0.00
90.0	0.00	3.85	0.00	0.00	0.00	0.00	0.00	5.39	1.54
135.0	0.00	0.00	5.77	5.77	0.00	2.31	0.00	0.00	0.00
180.0	0.00	0.00	0.00	3.08	0.77	8.47	0.00	0.00	0.00
225.0	0.00	2.31	2.31	9.24	9.62	0.00	0.00	5.77	0.00
270.0	0.38	0.00	0.00	5.00	5.00	0.00	0.00	0.00	0.00
315.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54
360.0	0.00	0.77	0.00	3.08	7.31	0.00	0.00	0.00	0.00
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	0.00	0.77	1.93	4.62	0.00	0.00	0.00	0.00	0.00
45.0	2.31	0.77	0.00	0.00	0.00	3.85	0.00	0.00	0.00
90.0	0.00	0.00	2.69	0.00	0.00	3.85	5.00	4.23	0.00
135.0	2.31	0.00	5.00	0.00	2.69	5.77	0.00	10.39	0.00
180.0	0.00	0.00	0.77	0.00	6.16	0.00	0.00	0.00	0.00
225.0	0.00	2.69	8.85	2.69	0.00	0.00	0.00	0.00	0.00
270.0	2.31	0.00	3.46	0.00	4.62	0.00	8.47	3.85	0.00
315.0	0.00	0.00	5.77	0.00	0.00	0.00	1.15	6.93	0.00
360.0	0.00	0.77	1.93	4.62	0.00	0.00	0.00	0.00	0.00
C/γ(°)	180.0								
0.0	0.00								
45.0	0.00								
90.0	5.77								
135.0	0.00								
180.0	0.00								
225.0	0.00								
270.0	5.77								
315.0	0.00								
360.0	0.00								