



SGSO

Address: LIT by CARDI

Client:

LumCAT: 0017440221 RIO 24W 4000K 2400lm

Luminaire:

Report No:

Voltage(V): 230.0000

Test No: KYZ-A251030009-02-005

Current(A): 0.1070

LampCAT: LED

Power (W): 24.0000

Lamp flux(lm)

PF: 0.9730

Number of Lamps: 1

Ballast type:

Length(mm): -192

Width(mm): -192

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 2400.00

Lumens(lm)/Power(W): 100.00

Central intensity(cd): 1219.975

Maximum intensity(cd): 1224.886

Angle of maximum intensity: C=90.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=84.5

[C90/270]Total=84.5

Field angle(10%Imax): [C0/180]Total=142.4

[C90/270]Total=141.8

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

Maximum s/h(1/4): C0_180=1.16 C90_270=1.20

Up flux rate of LUM(%): 0.41%

Down flux rate of LUM(%): 99.59%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 87.194%

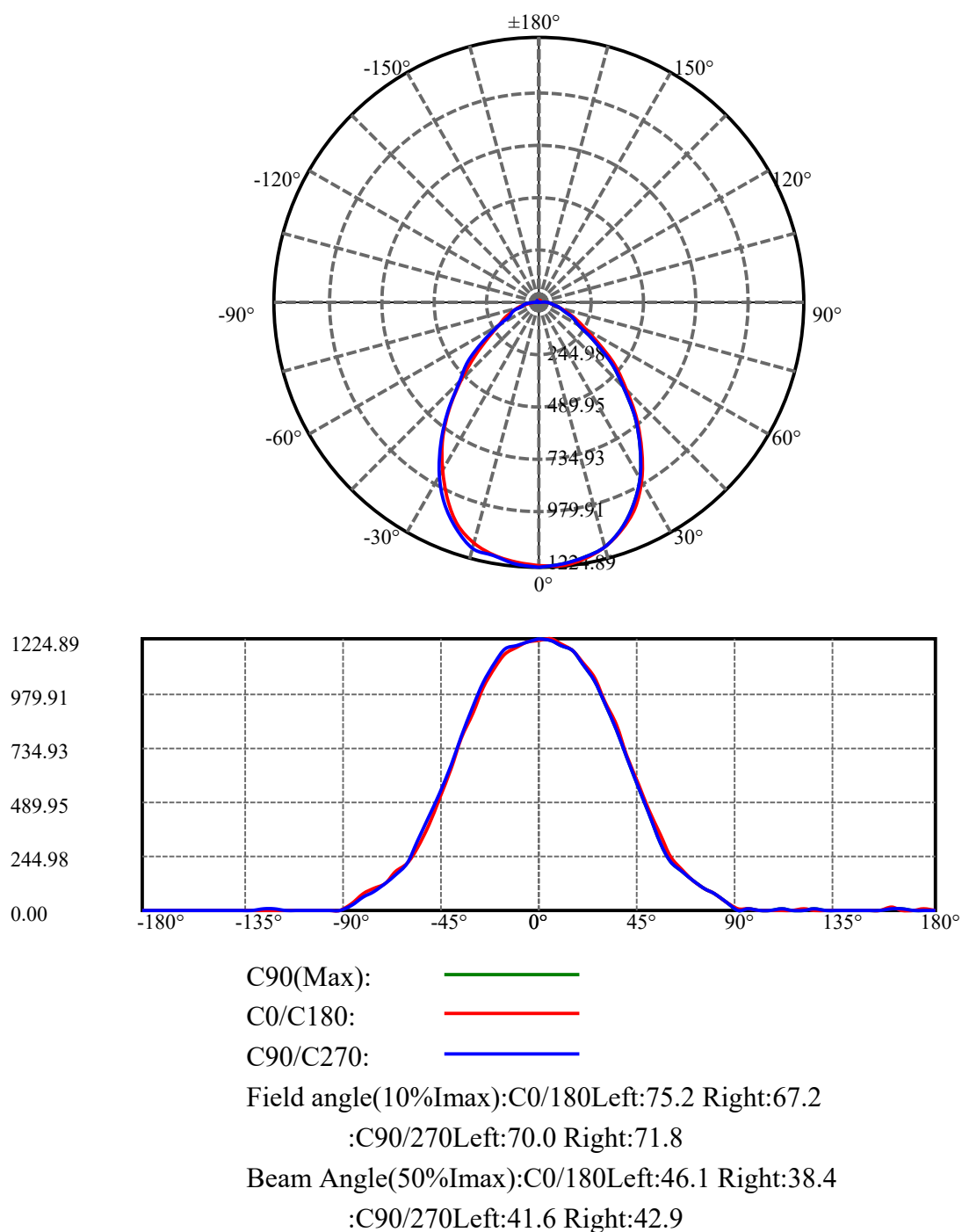
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1376.919	0.000	0	.000%	.000%
5.0	1371.270	29.116	29.116	1.213%	1.213%
10.0	1349.048	86.242	115.358	3.593%	4.807%
15.0	1316.328	140.119	255.477	5.838%	10.645%
20.0	1254.671	187.779	443.256	7.824%	18.469%
25.0	1157.735	224.229	667.486	9.343%	27.812%
30.0	1038.471	246.310	913.795	10.263%	38.075%
35.0	902.154	253.257	1167.052	10.552%	48.627%
40.0	759.282	245.660	1412.712	10.236%	58.863%
45.0	597.066	222.565	1635.277	9.274%	68.137%
50.0	451.690	187.805	1823.082	7.825%	75.962%
55.0	334.185	151.434	1974.516	6.310%	82.272%
60.0	242.525	118.138	2092.654	4.922%	87.194%
65.0	181.774	91.412	2184.066	3.809%	91.003%
70.0	139.834	72.168	2256.234	3.007%	94.010%
75.0	104.929	56.698	2312.932	2.362%	96.372%
80.0	73.541	42.320	2355.252	1.763%	98.136%
85.0	34.053	25.909	2381.162	1.080%	99.215%
90.0	3.144	9.026	2390.188	.376%	99.591%
95.0	5.063	1.991	2392.179	.083%	99.674%
100.0	0.160	1.258	2393.437	.052%	99.727%
105.0	0.426	0.139	2393.576	.006%	99.732%
110.0	3.517	0.913	2394.489	.038%	99.770%
115.0	1.332	1.088	2395.577	.045%	99.816%
120.0	1.972	0.712	2396.289	.030%	99.845%
125.0	1.759	0.764	2397.053	.032%	99.877%
130.0	0.480	0.431	2397.485	.018%	99.895%
135.0	0.799	0.229	2397.714	.010%	99.905%
140.0	0.320	0.184	2397.897	.008%	99.912%
145.0	0.693	0.150	2398.047	.006%	99.919%
150.0	1.812	0.327	2398.374	.014%	99.932%
155.0	2.238	0.454	2398.828	.019%	99.951%
160.0	2.451	0.436	2399.264	.018%	99.969%
165.0	2.078	0.331	2399.595	.014%	99.983%
170.0	1.279	0.176	2399.771	.007%	99.991%
175.0	3.997	0.167	2399.939	.007%	99.997%
180.0	1.705	0.060	2399.999	.003%	100.000%

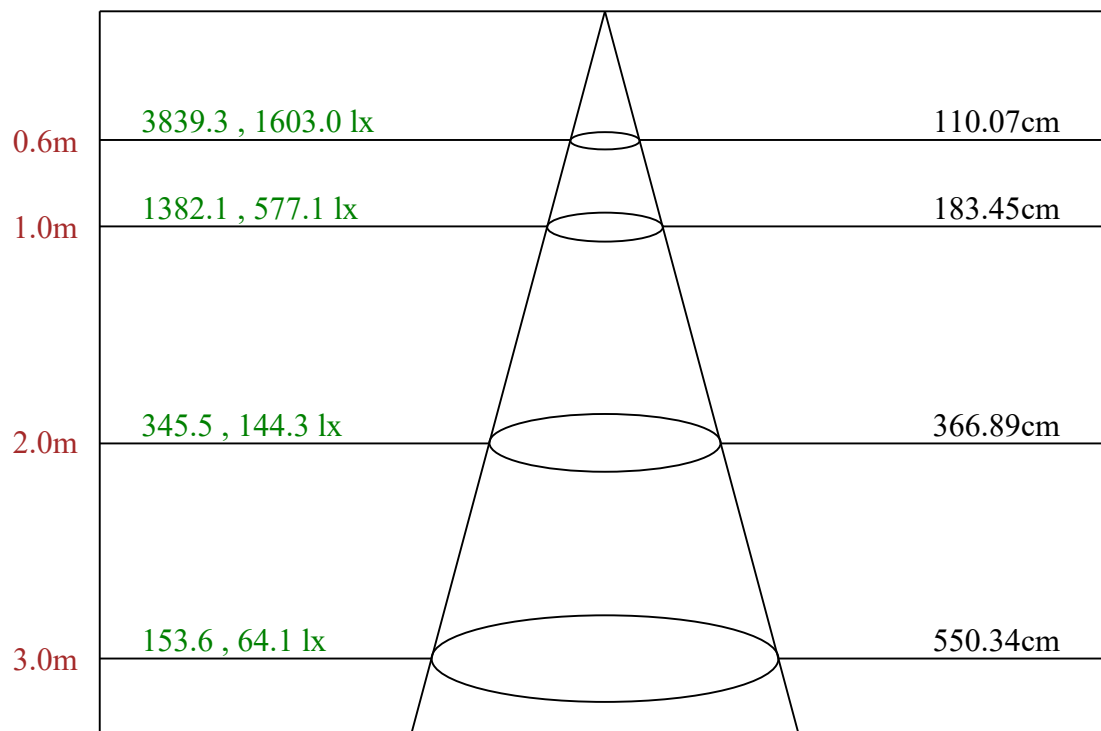
ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixt
0-30	913.80	38.07%
0-40	1412.71	58.86%
0-60	2092.65	87.19%
0-90	2390.19	99.59%
0-120	2396.29	99.85%
0-180	2400.00	100.00%
60-90	415.67	17.32%
90-120	15.13	0.63%
90-130	16.32	0.68%
90-150	17.21	0.72%
90-180	18.78	0.78%
0-53.20	1920.00	80.00%

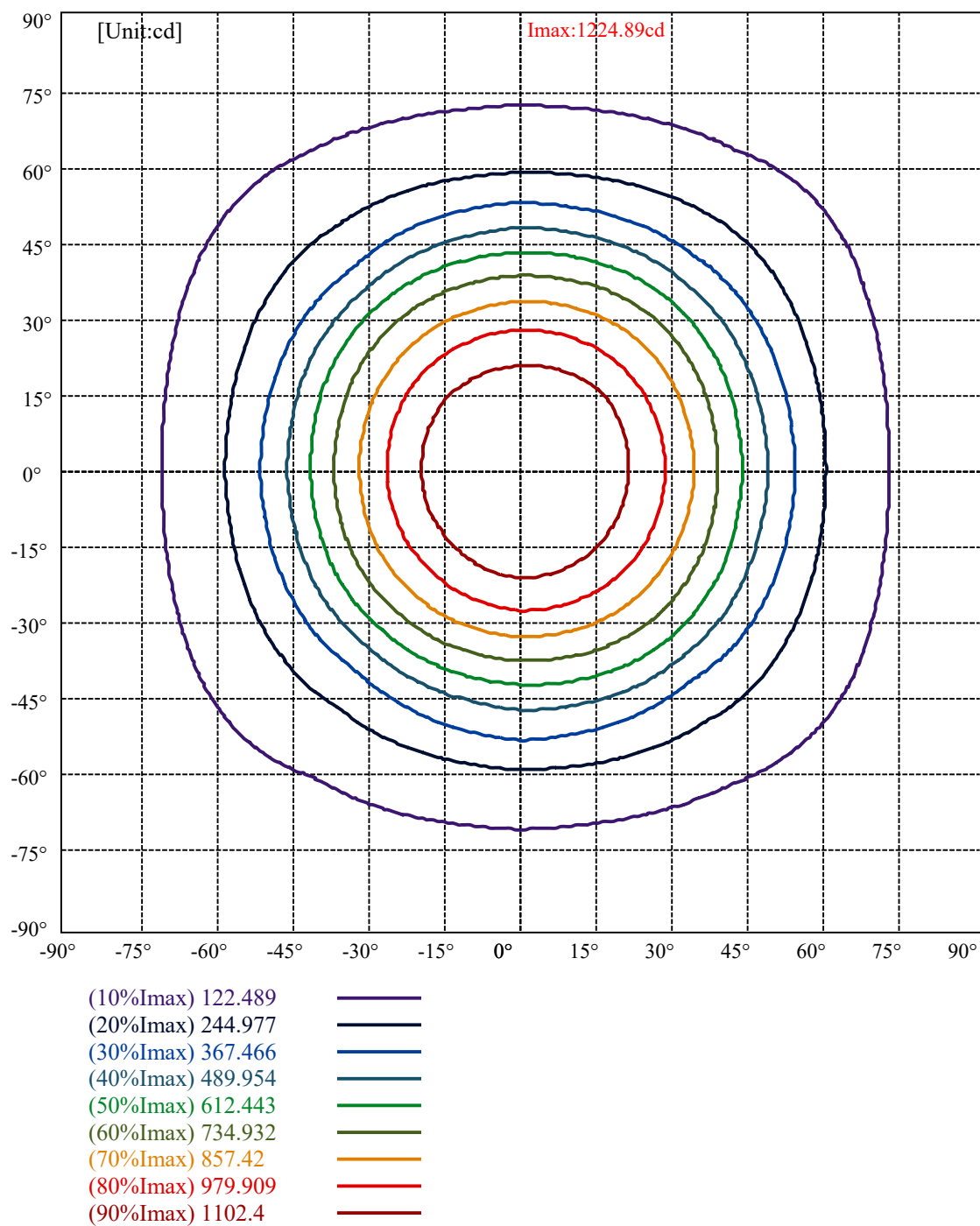
ZONAL LUMEN SUMMARY

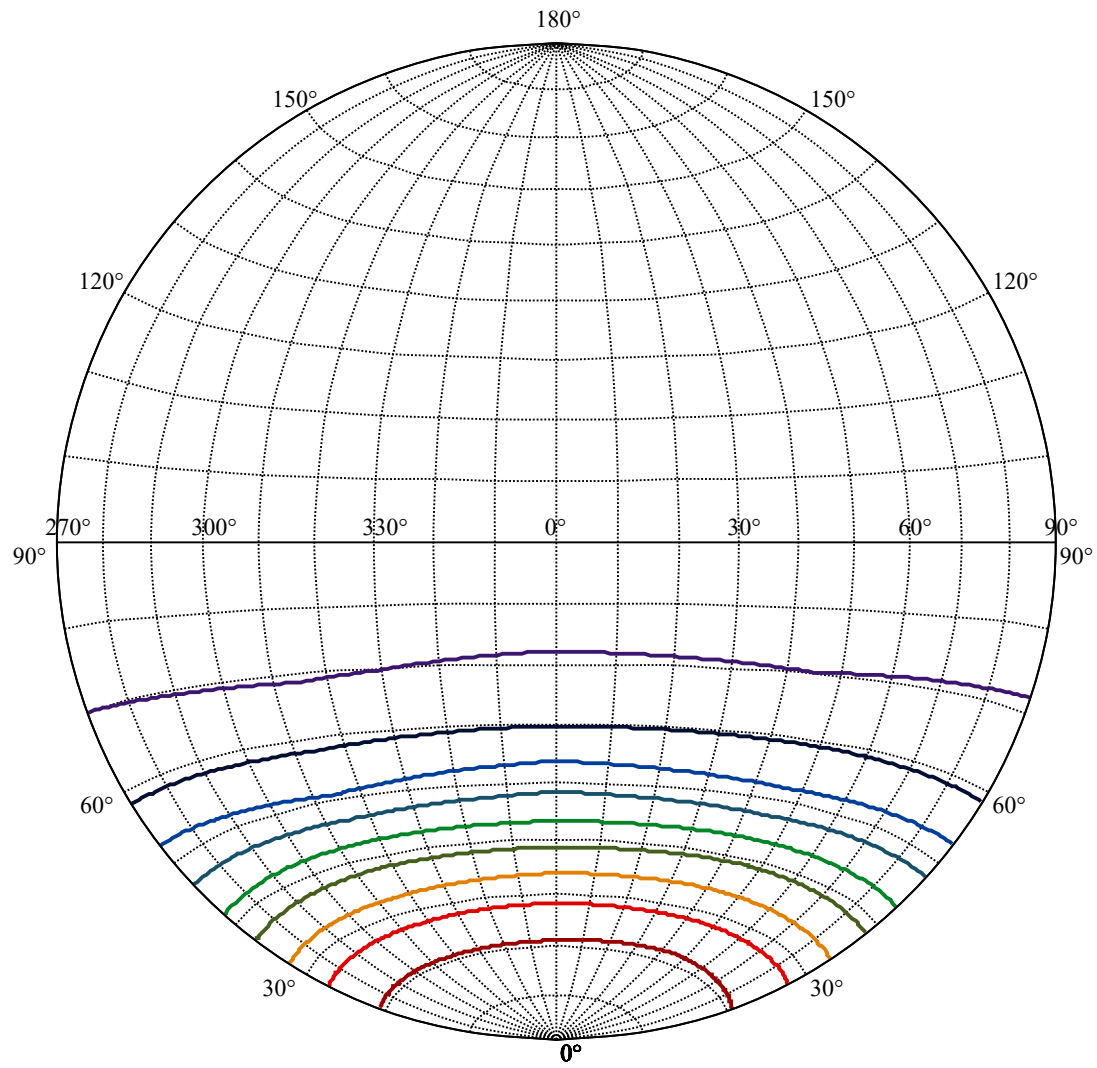
0-10	115.36
10-20	327.90
20-30	470.54
30-40	498.92
40-50	410.37
50-60	269.57
60-70	163.58
70-80	99.02
80-90	34.94
90-100	3.25
100-110	1.05
110-120	1.80
120-130	1.20
130-140	0.41
140-150	0.48
150-160	0.89
160-170	0.51
170-180	0.17





Max , Ave Beam angle of C90 plane 85.06



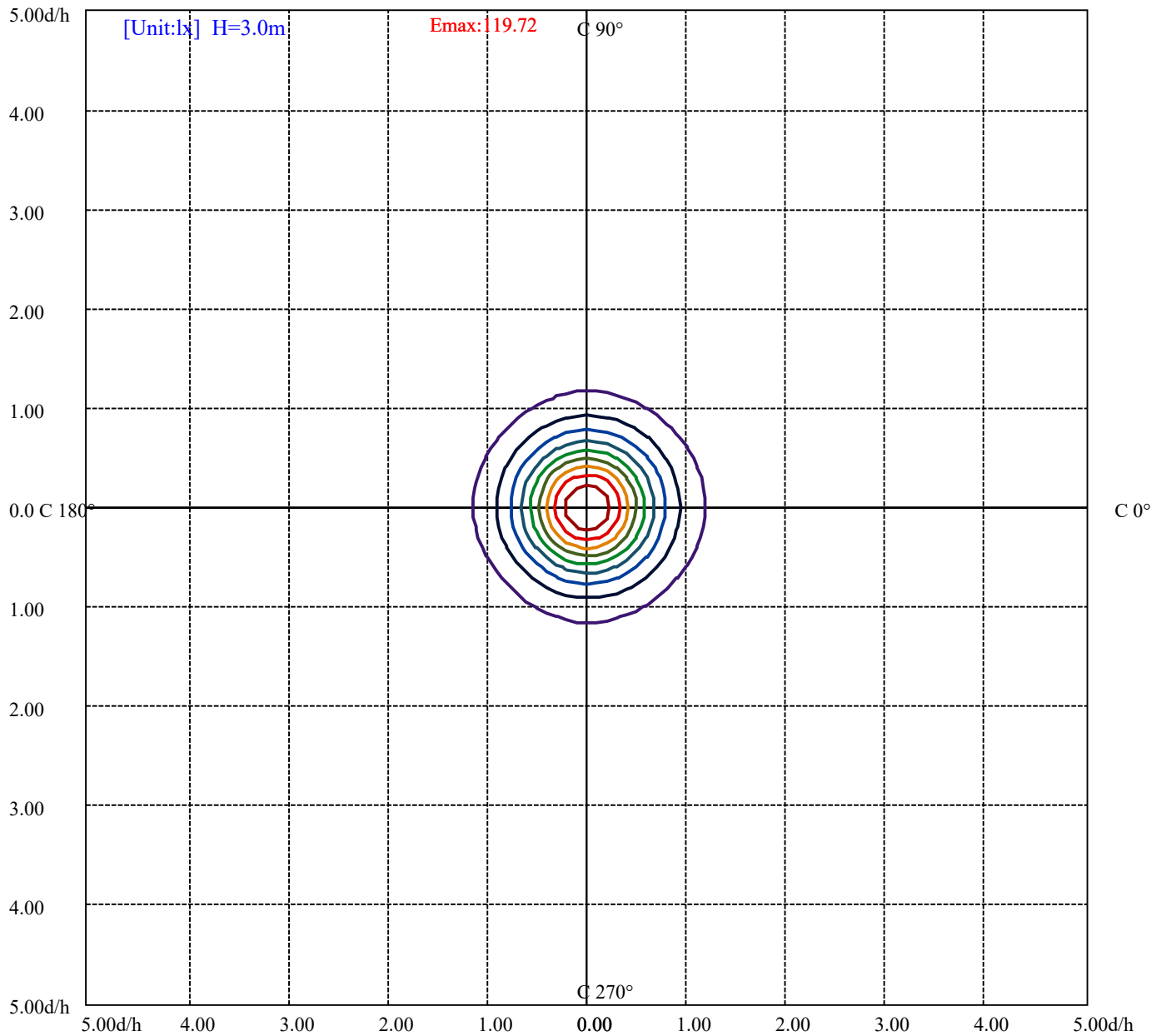


House

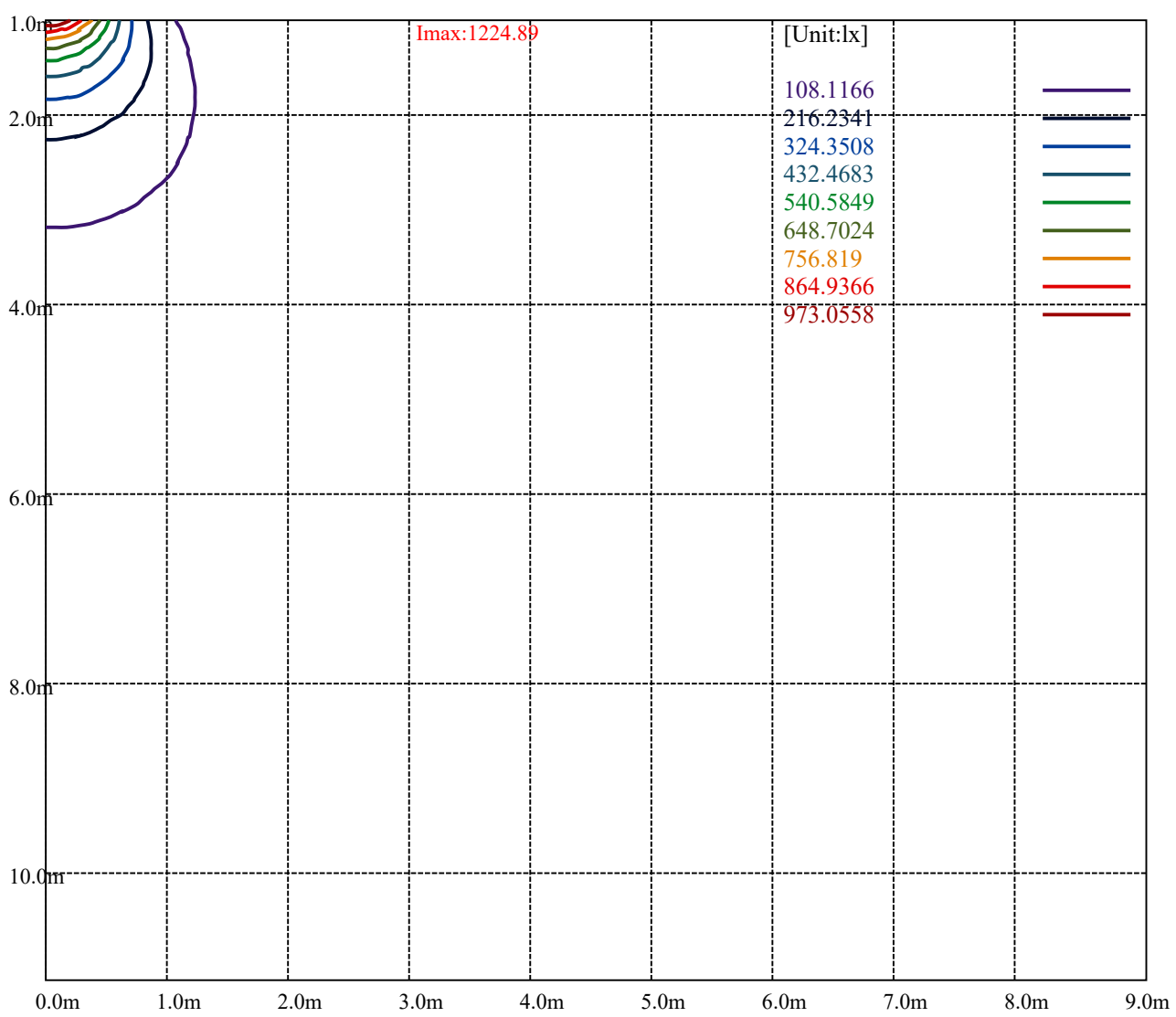
[Unit:cd]

Road

Imax:1224.89	
(10%Imax) 108.5527	
(20%Imax) 217.1044	
(30%Imax) 325.6571	
(40%Imax) 434.2088	
(50%Imax) 542.7615	
(60%Imax) 651.3141	
(70%Imax) 759.8659	
(80%Imax) 868.4186	
(90%Imax) 976.973	



(10%Emax) 11.97209	—
(20%Emax) 23.94419	—
(30%Emax) 35.91628	—
(40%Emax) 47.88838	—
(50%Emax) 59.86037	—
(60%Emax) 71.83247	—
(70%Emax) 83.80456	—
(80%Emax) 95.77666	—
(90%Emax) 107.749	—



Luminance Table

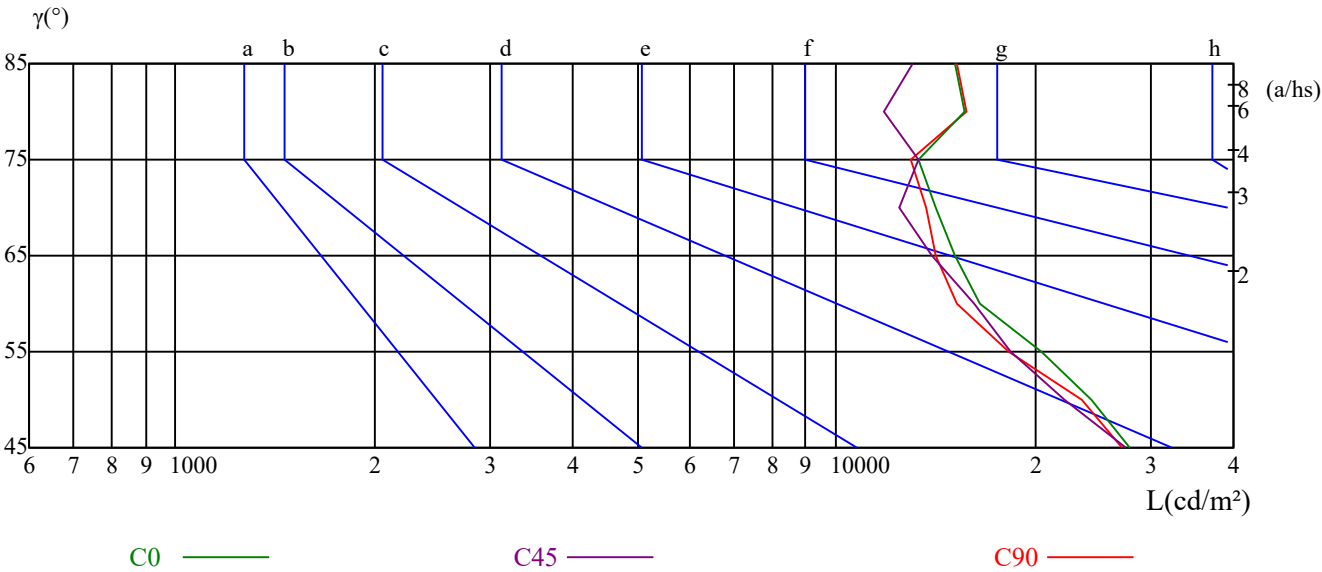
γ	45	50	55	60	65	70	75	80	85
C0	27885	24402	20408	16573	15161	14155	13361	15706	15122
C45	27534	22210	18406	16207	14018	12476	13361	11798	13026
C90	27091	23509	18315	15216	14173	13735	13008	15781	15272

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
14590	13555	12258	13059	12277	12151	12951	12203	11342

Glare Table

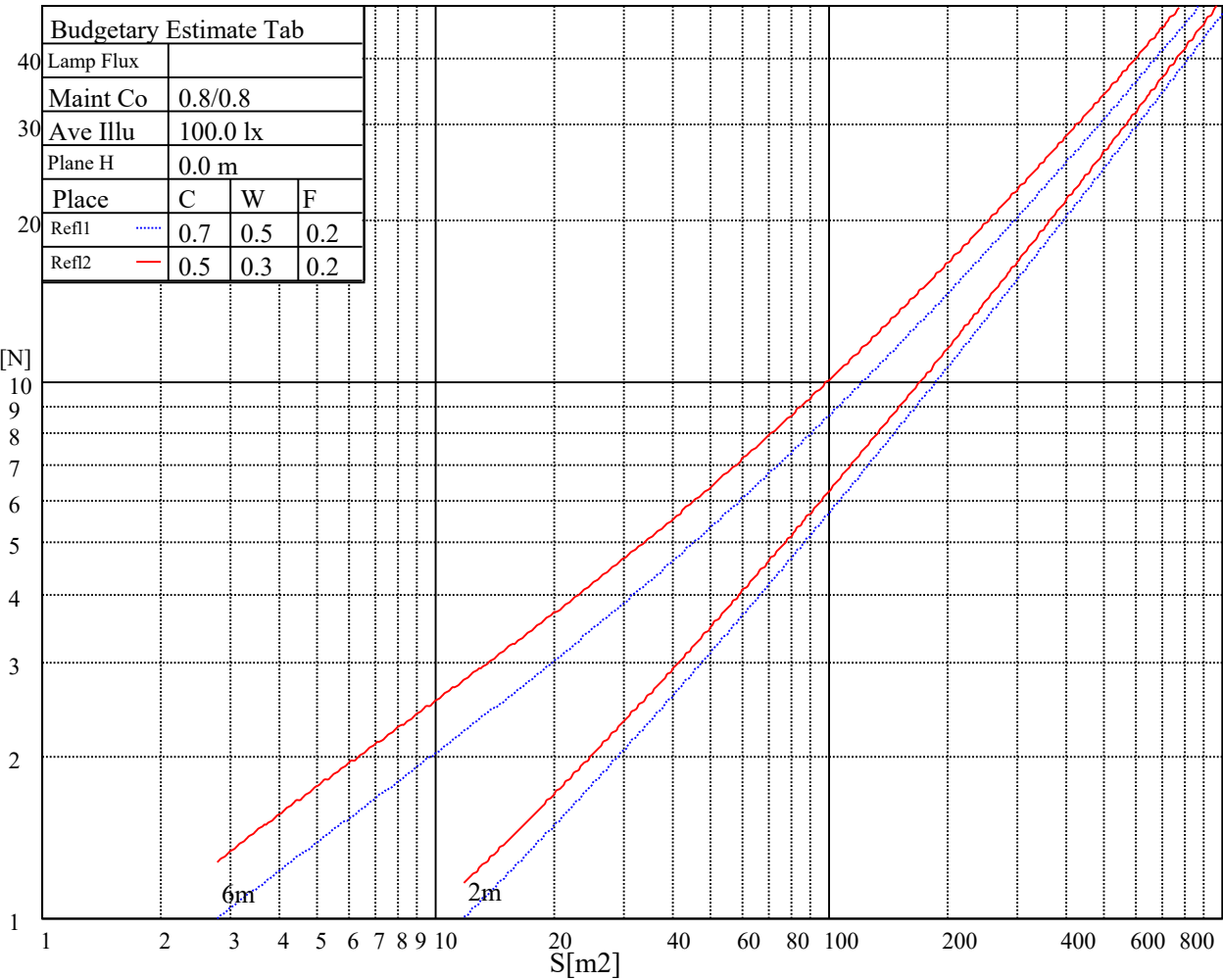
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve

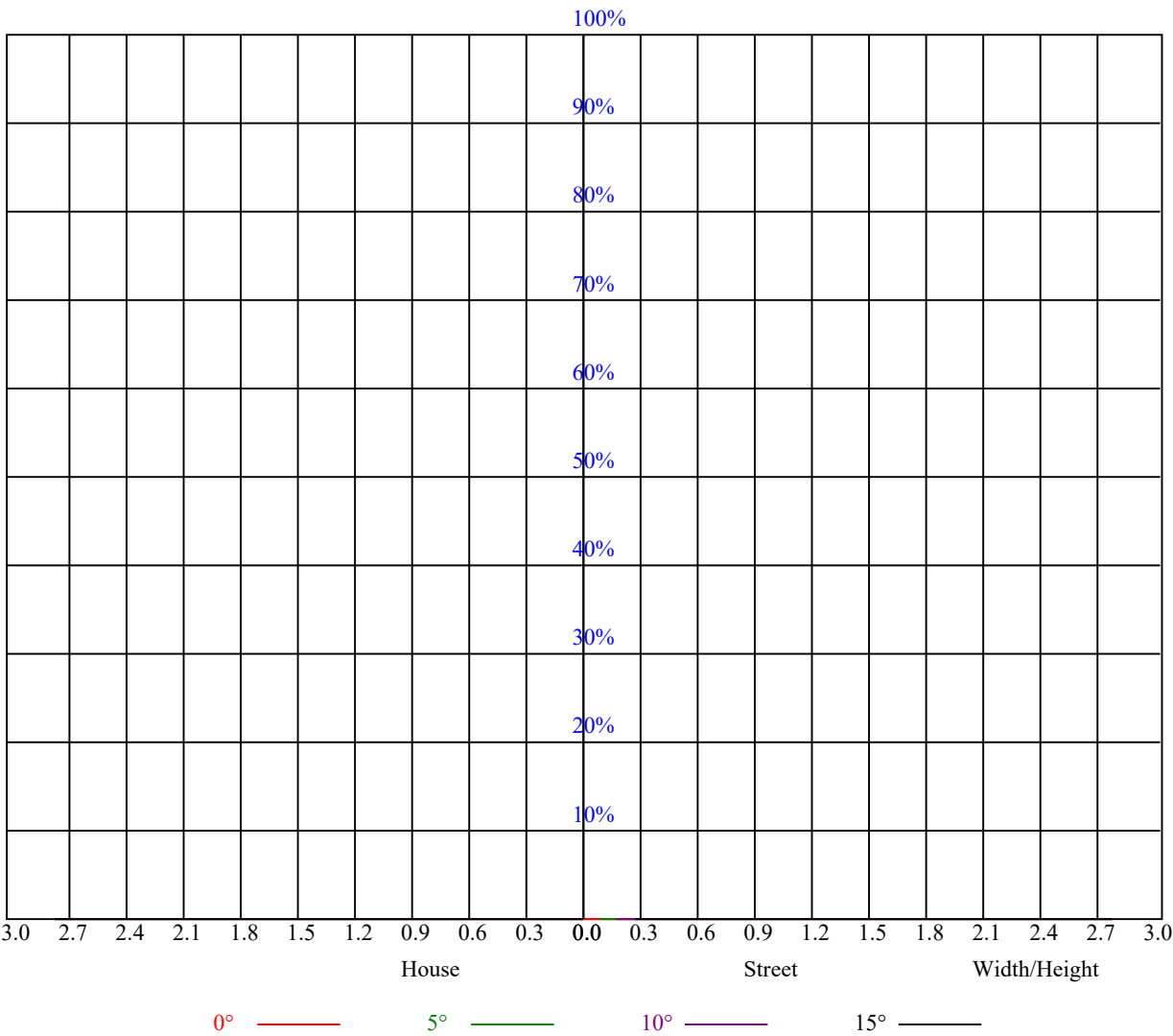


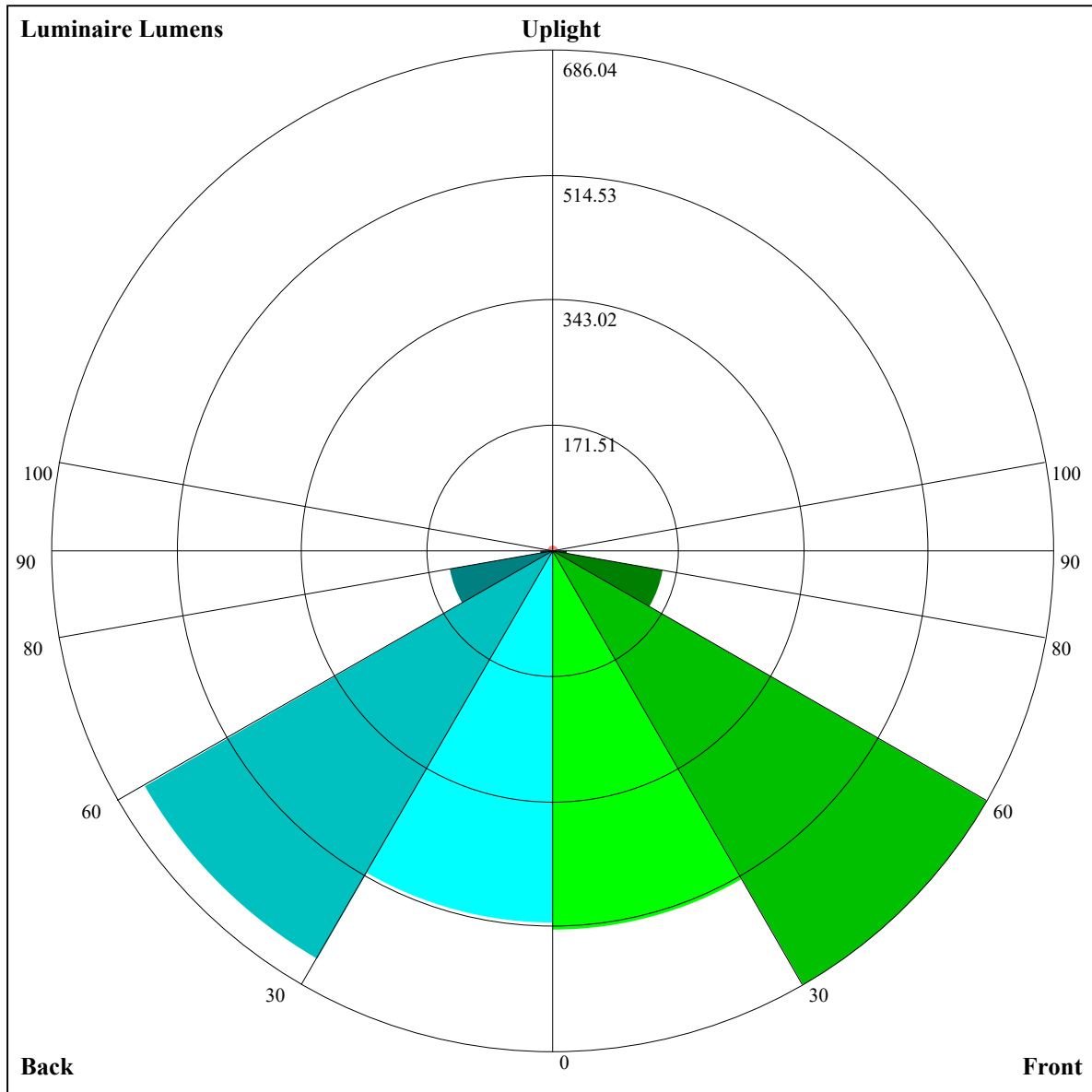
Illumination assessment according UGR											
Rf of Ceiling		70	70	50	50	30	70	70	50	50	30
Rf of Wall		50	30	50	30	30	50	30	50	30	30
Rf of Floor		20	20	20	20	20	20	20	20	20	20
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	18.47	19.91	18.83	20.23	20.56	18.23	19.67	18.60	20.00	20.32
	3H	19.48	20.78	19.87	21.12	21.47	19.24	20.53	19.62	20.88	21.23
	4H	19.93	21.15	20.33	21.51	21.88	19.70	20.92	20.10	21.28	21.65
	6H	20.43	21.56	20.85	21.93	22.34	20.23	21.36	20.65	21.73	22.14
	8H	20.63	21.71	21.05	22.10	22.51	20.45	21.53	20.87	21.92	22.33
	12H	20.77	21.81	21.20	22.20	22.62	20.60	21.64	21.03	22.03	22.46
4H	2H	18.82	20.03	19.22	20.39	20.77	18.62	19.84	19.02	20.20	20.57
	3H	20.00	21.03	20.43	21.42	21.85	19.81	20.83	20.23	21.23	21.65
	4H	20.65	21.55	21.09	21.98	22.43	20.46	21.37	20.91	21.79	22.24
	6H	21.26	22.07	21.73	22.52	22.97	21.11	21.91	21.58	22.36	22.82
	8H	21.56	22.31	22.04	22.77	23.24	21.42	22.17	21.90	22.63	23.10
	12H	21.79	22.49	22.28	22.94	23.45	21.67	22.36	22.15	22.81	23.33
8H	4H	20.84	21.59	21.32	22.04	22.52	20.67	21.42	21.15	21.87	22.35
	6H	21.58	22.21	22.08	22.68	23.20	21.45	22.07	21.95	22.55	23.06
	8H	22.02	22.56	22.54	23.08	23.58	21.90	22.45	22.42	22.97	23.46
	12H	22.34	22.80	22.87	23.32	23.84	22.24	22.70	22.78	23.22	23.74
12H	4H	20.86	21.55	21.34	22.00	22.52	20.69	21.39	21.18	21.84	22.35
	6H	21.68	22.22	22.20	22.74	23.24	21.55	22.09	22.07	22.61	23.11
	8H	22.11	22.57	22.64	23.09	23.61	22.00	22.46	22.53	22.98	23.50
Variation with the observer position at spacings:											
S = 1.0H		0.3/-0.7					0.3/-0.6				
S = 1.5H		0.7/-1.2					0.7/-1.1				
S = 2.0H		1.4/-1.2					1.5/-1.2				
Standard tables:		BK3					BK3				
Uncorrected UGR		6.9					7.0				

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	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	0.49	0.44	0.56	0.49	0.44	0.54	0.48	0.43	0.53	0.47	0.43	0.41
8	0.53	0.45	0.40	0.53	0.45	0.40	0.51	0.45	0.40	0.50	0.44	0.39	0.49	0.43	0.39	0.37
9	0.49	0.42	0.37	0.49	0.41	0.36	0.48	0.41	0.36	0.46	0.40	0.36	0.45	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=518.89,FM=686.04,FH=153.37,FVH=20.71

BL=511.49,BM=647.21,BH=143.98,BVH=18.94

UL=3.67,UH=7.4

BUG Rating:B2-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	1219.97	1223.38	1205.24	1172.37	1118.34	1049.58	945.30	834.98	698.21
45.0	1215.82	1216.95	1198.82	1175.01	1137.99	1046.56	941.52	834.60	711.05
90.0	1224.89	1213.93	1193.91	1172.75	1113.05	1031.82	937.37	817.22	694.43
135.0	1220.35	1217.33	1195.42	1152.72	1106.63	1022.75	907.14	787.37	670.25
180.0	1219.97	1207.88	1185.59	1157.63	1093.78	1004.24	893.16	773.77	640.78
225.0	1215.82	1216.57	1195.79	1158.77	1093.03	995.17	888.25	759.41	620.38
270.0	1224.89	1211.66	1190.88	1176.90	1116.07	1026.91	917.72	786.24	657.03
315.0	1220.35	1214.31	1198.82	1166.32	1116.45	1031.07	932.08	802.49	691.03
360.0	1219.97	1223.38	1205.24	1172.37	1118.34	1049.58	945.30	834.98	698.21
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	570.88	454.14	338.90	239.91	185.51	140.17	100.12	78.96	38.16
45.0	563.70	413.33	305.66	234.63	171.53	123.55	100.12	59.32	32.87
90.0	554.64	437.51	304.14	220.27	173.42	136.01	97.48	79.34	38.54
135.0	506.28	362.33	279.96	204.02	140.93	122.04	82.36	60.07	31.74
180.0	504.76	387.26	282.61	215.36	171.53	123.55	95.59	77.45	27.20
225.0	468.49	338.15	257.67	177.20	132.61	111.83	86.90	50.63	18.89
270.0	521.39	425.05	312.83	210.07	158.31	122.41	86.52	60.07	23.05
315.0	542.92	384.62	287.52	218.00	154.91	111.83	94.83	55.54	30.98
360.0	570.88	454.14	338.90	239.91	185.51	140.17	100.12	78.96	38.16
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	4.91	7.18	0.00	0.00	0.00	1.51	4.16	0.00	3.40
45.0	6.80	15.87	0.00	0.38	10.58	2.64	0.00	0.76	0.00
90.0	0.76	9.82	0.00	0.00	4.91	0.38	0.00	4.53	0.00
135.0	6.80	0.00	0.00	0.00	6.80	0.00	4.53	0.00	0.00
180.0	0.00	3.02	0.00	0.00	0.00	2.27	0.00	0.00	0.00
225.0	1.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
270.0	1.51	0.00	0.00	2.64	0.00	0.76	5.29	7.18	0.00
315.0	0.00	0.00	1.13	0.00	2.64	1.89	0.00	0.00	0.00
360.0	4.91	7.18	0.00	0.00	0.00	1.51	4.16	0.00	3.40
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	0.00	1.51	0.00	3.78	3.40	12.47	0.00	0.00	7.18
45.0	0.00	0.00	0.00	5.29	0.00	0.00	0.38	0.00	3.78
90.0	0.00	0.00	0.00	0.00	0.76	4.91	8.69	1.13	3.40
135.0	5.29	0.00	1.89	0.00	4.91	0.00	0.00	0.00	3.02
180.0	0.00	0.00	0.00	0.00	0.76	0.00	0.00	0.00	0.00
225.0	0.38	0.00	0.00	0.00	0.00	0.00	5.67	0.76	8.69
270.0	0.00	0.00	0.00	3.78	1.51	0.00	0.00	3.78	1.89
315.0	0.00	0.76	3.02	0.00	4.53	0.00	0.00	3.40	0.38
360.0	0.00	1.51	0.00	3.78	3.40	12.47	0.00	0.00	7.18
C/γ(°)	180.0								
0.0	1.51								
45.0	0.00								
90.0	0.00								
135.0	4.53								
180.0	1.51								
225.0	0.00								
270.0	0.00								
315.0	4.53								
360.0	1.51								