



SGSO

Address: LIT by CARDI

Client:

LumCAT: 0017440217 RIO 2.4W 3000K 240lm

Luminaire:

Report No:

Voltage(V): 230.42

Test No: KYZ-A251030009-06-006

Current(A): 0.0207

LampCAT: LED

Power (W): 2.4000

Lamp flux(lm): -1.0

PF: 0.5040

Number of Lamps: 1

Ballast type:

Length(mm): -47

Width(mm): -47

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 240.00

Efficiency(%): 0.00%

Lumens(lm)/Power(W): 100.00

Central intensity(cd): 127.246

Maximum intensity(cd): 127.246

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=81.2

[C90/270]Total=82.6

Field angle(10%Imax): [C0/180]Total=142.3

[C90/270]Total=143.7

Maximum s/h(1/2): C0_180=1.07 C90_270=1.16

Maximum s/h(1/4): C0_180=1.13 C90_270=1.20

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 0.00%

Up flux rate of LUM(%): 4.77%

Down flux rate of LUM(%): 95.23%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 83.529%

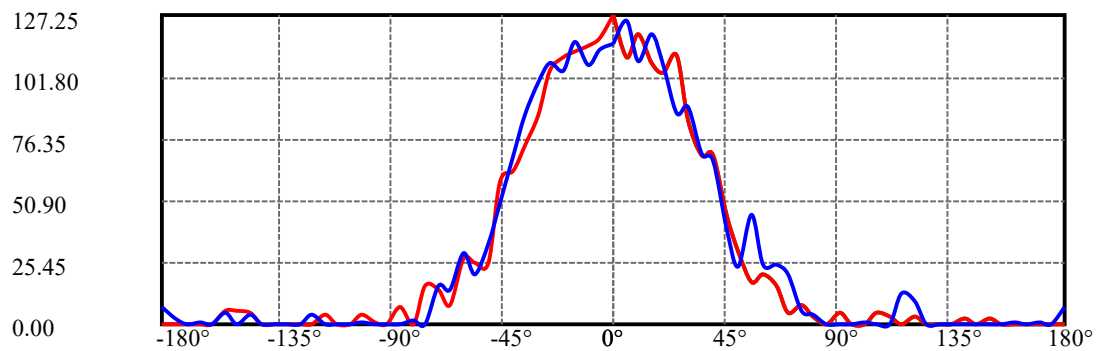
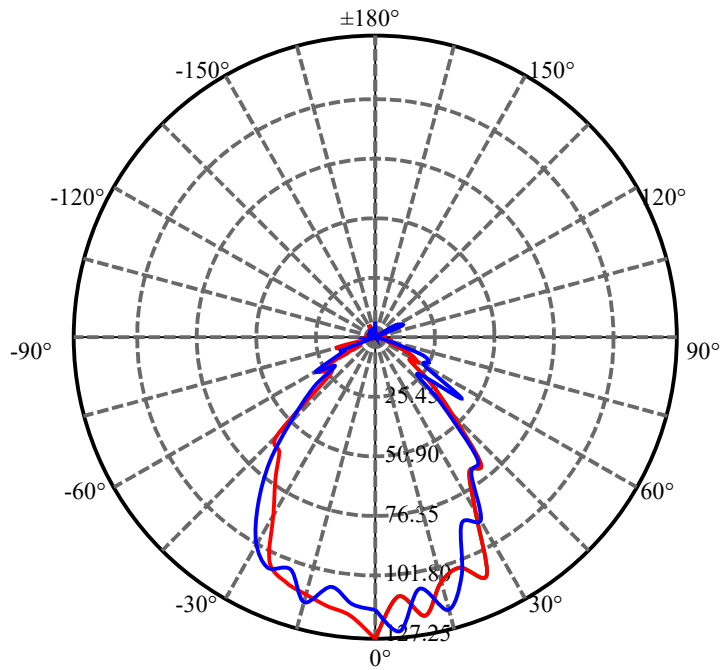
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	128.643	0.000	0	.000%	.000%
5.0	127.418	2.855	2.855	.000%	1.190%
10.0	122.089	8.325	11.18	.000%	4.659%
15.0	119.744	13.380	24.561	.000%	10.234%
20.0	114.894	18.037	42.597	.000%	17.749%
25.0	107.593	21.765	64.362	.000%	26.818%
30.0	96.349	24.073	88.435	.000%	36.848%
35.0	82.920	24.623	113.058	.000%	47.108%
40.0	70.450	23.867	136.925	.000%	57.053%
45.0	51.479	21.057	157.982	.000%	65.827%
50.0	36.664	16.612	174.595	.000%	72.749%
55.0	30.909	13.704	188.299	.000%	78.459%
60.0	25.526	12.167	200.466	.000%	83.529%
65.0	16.733	9.582	210.048	.000%	87.521%
70.0	11.458	6.658	216.706	.000%	90.295%
75.0	10.232	5.288	221.994	.000%	92.499%
80.0	3.944	3.538	225.532	.000%	93.973%
85.0	3.624	1.918	227.449	.000%	94.772%
90.0	0.693	1.102	228.552	.000%	95.231%
95.0	2.291	0.762	229.314	.000%	95.549%
100.0	1.812	1.040	230.354	.000%	95.982%
105.0	1.599	0.851	231.205	.000%	96.337%
110.0	0.426	0.494	231.699	.000%	96.543%
115.0	5.169	1.322	233.02	.000%	97.093%
120.0	2.558	1.752	234.772	.000%	97.823%
125.0	0.373	0.632	235.404	.000%	98.087%
130.0	1.172	0.313	235.718	.000%	98.217%
135.0	1.013	0.412	236.13	.000%	98.389%
140.0	2.132	0.543	236.673	.000%	98.615%
145.0	1.652	0.589	237.261	.000%	98.860%
150.0	5.596	0.995	238.257	.000%	99.275%
155.0	1.599	0.849	239.106	.000%	99.629%
160.0	1.812	0.334	239.44	.000%	99.768%
165.0	1.705	0.270	239.71	.000%	99.881%
170.0	0.480	0.121	239.831	.000%	99.931%
175.0	2.558	0.101	239.932	.000%	99.973%
180.0	3.198	0.064	239.996	.000%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	88.44	N.A.	36.85%
0-40	136.92	N.A.	57.05%
0-60	200.47	N.A.	83.53%
0-90	228.55	N.A.	95.23%
0-120	234.77	N.A.	97.82%
0-180	240.00	N.A.	100.00%
60-90	40.25	N.A.	16.77%
90-120	7.32	N.A.	3.05%
90-130	8.27	N.A.	3.45%
90-150	10.81	N.A.	4.50%
90-180	12.48	N.A.	5.20%
0-56.52	192.00	N.A.	80.00%

ZONAL LUMEN SUMMARY

0-10	11.18
10-20	31.42
20-30	45.84
30-40	48.49
40-50	37.67
50-60	25.87
60-70	16.24
70-80	8.83
80-90	3.02
90-100	1.80
100-110	1.34
110-120	3.07
120-130	0.95
130-140	0.95
140-150	1.58
150-160	1.18
160-170	0.39
170-180	0.10



C0(Max):

C0/C180:

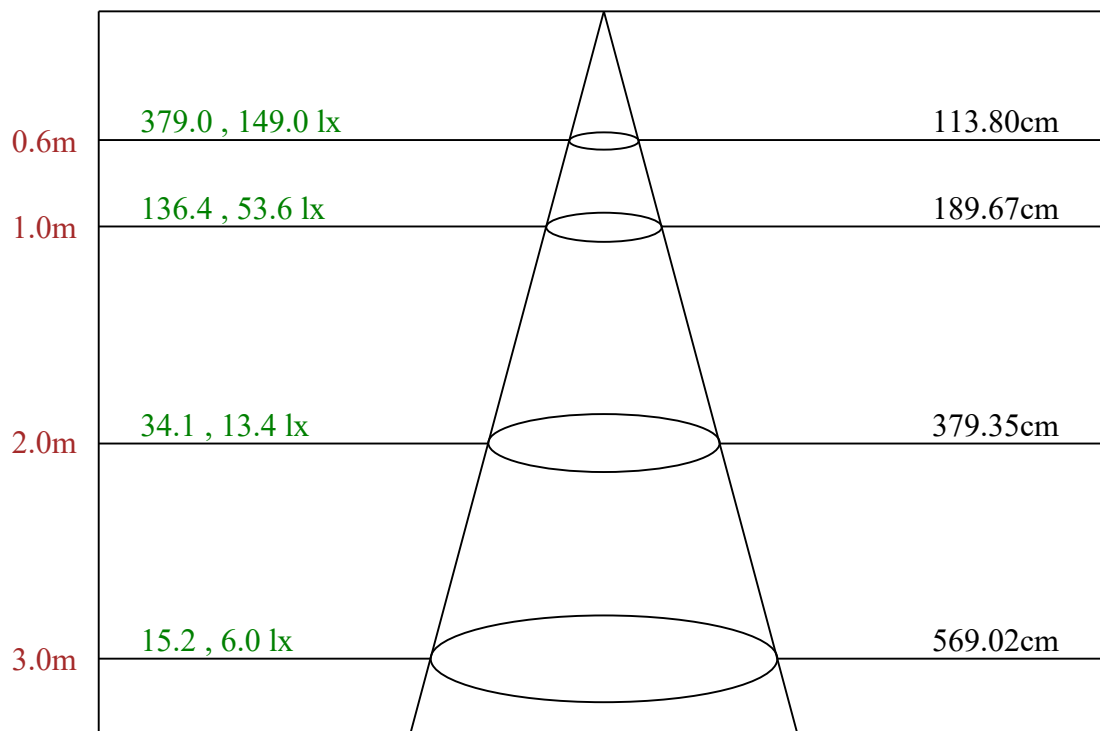
C90/C270:

Field angle(10%Imax):C0/180Left:76.0 Right:66.3

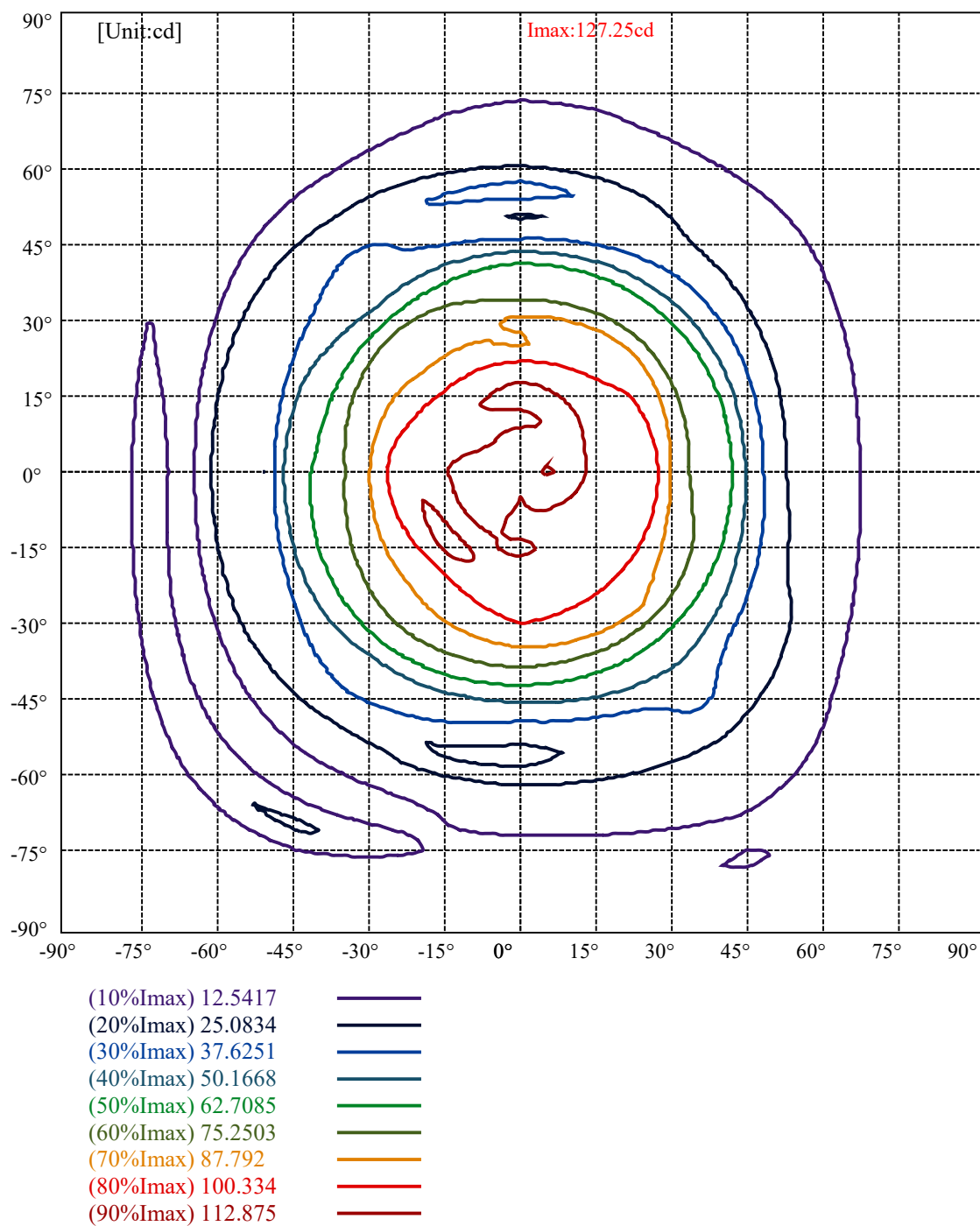
:C90/270Left:76.1 Right:67.6

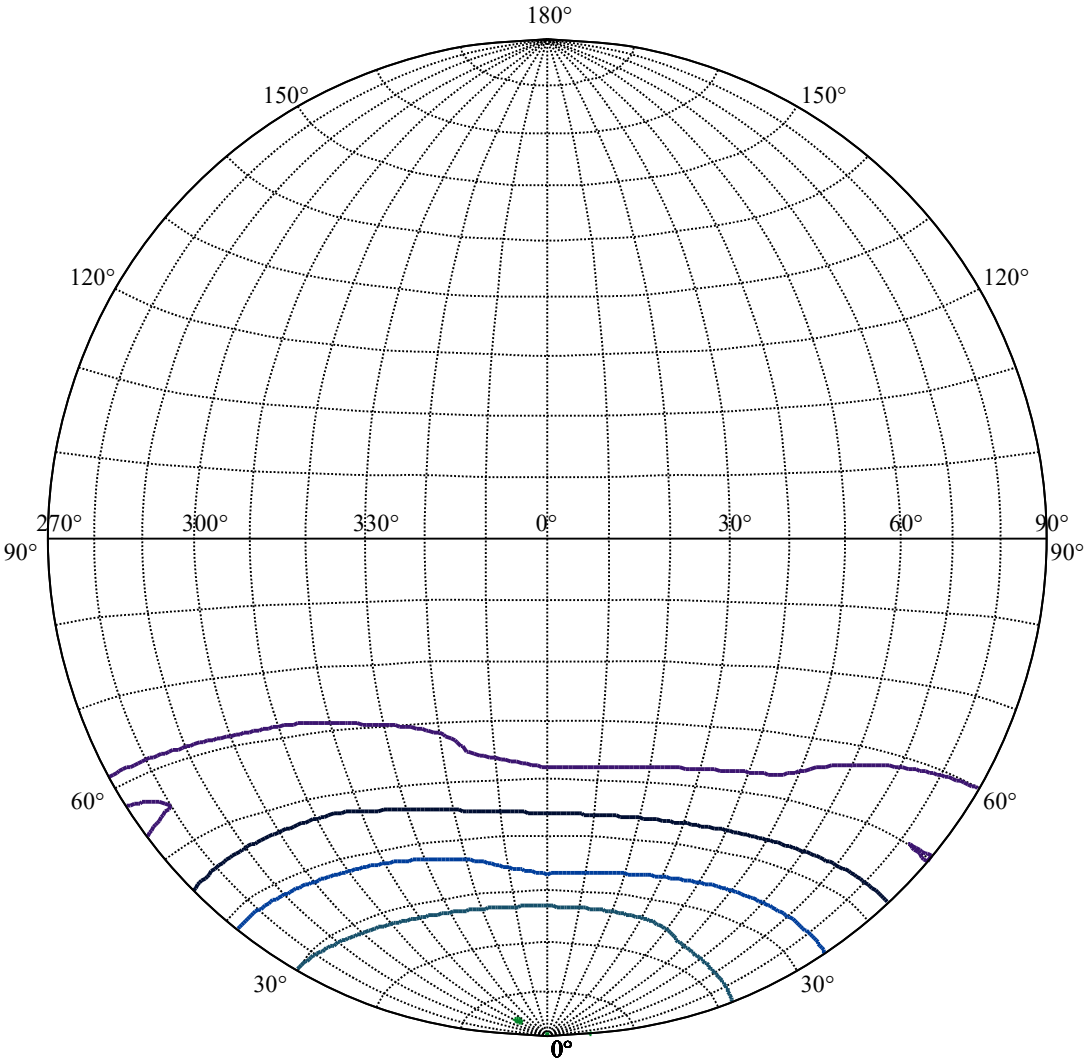
Beam Angle(50%Imax):C0/180Left:40.0 Right:41.2

:C90/270Left:46.8 Right:35.8



Max , Ave Beam angle of C0 plane 86.96



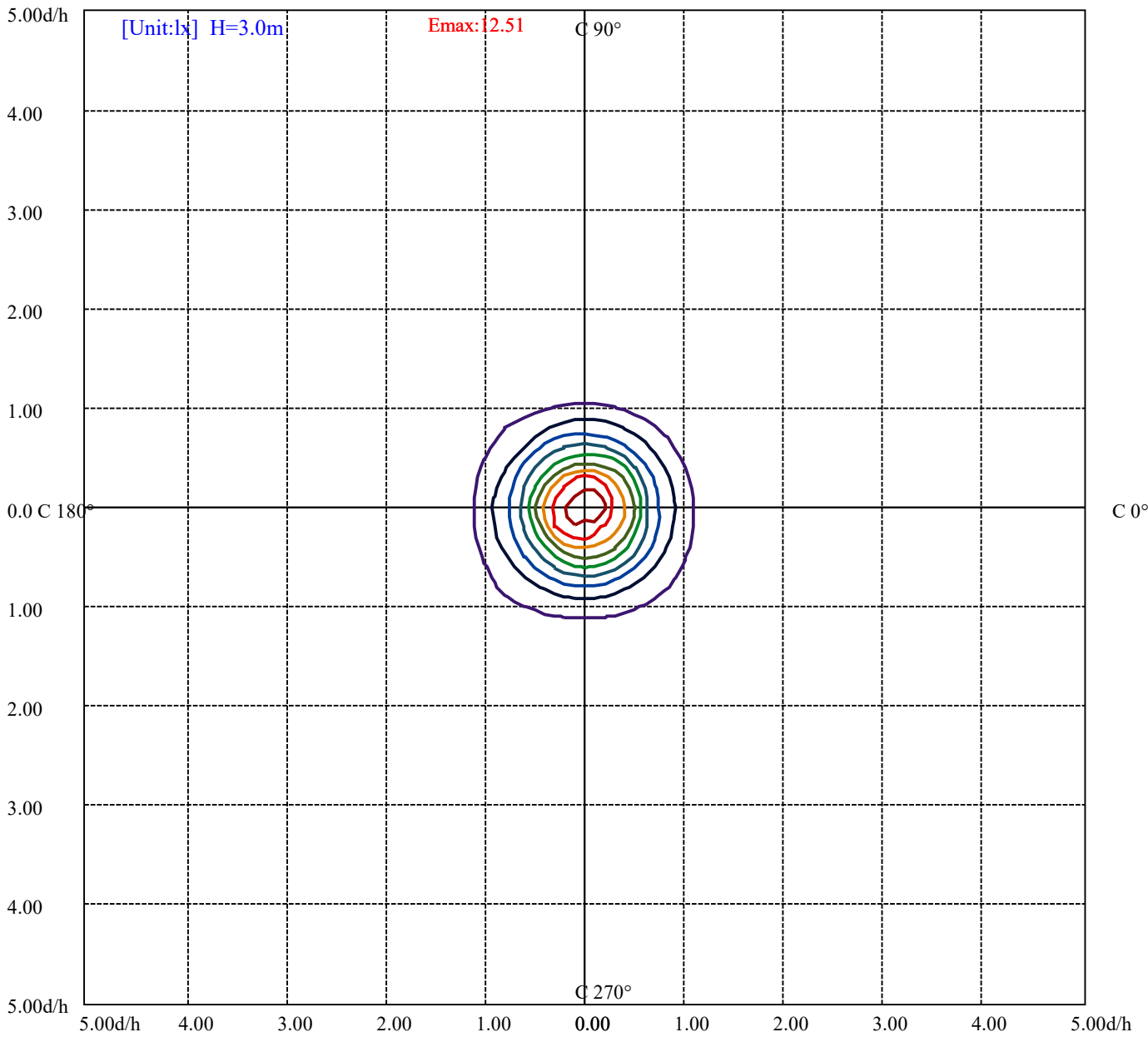


House

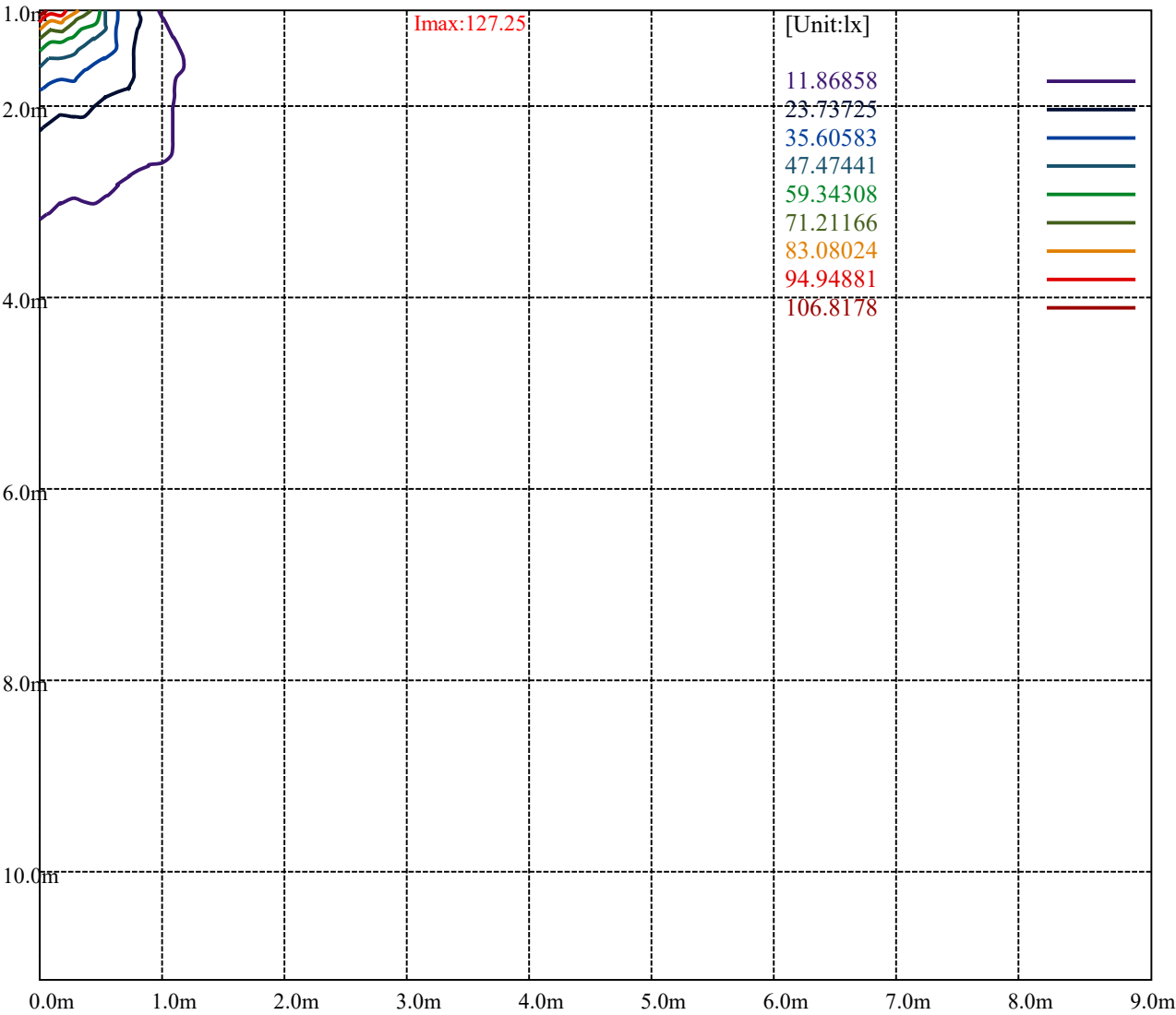
[Unit:cd]

Road

Imax:127.25	
(10%Imax) 23.20466	
(20%Imax) 46.40932	
(30%Imax) 69.61399	
(40%Imax) 92.81865	
(50%Imax) 116.0229	



(10%Emax)	1.250569	
(20%Emax)	2.501139	
(30%Emax)	3.751719	
(40%Emax)	5.002287	
(50%Emax)	6.252857	
(60%Emax)	7.503426	
(70%Emax)	8.754005	
(80%Emax)	10.00457	
(90%Emax)	11.25511	



Luminance Table

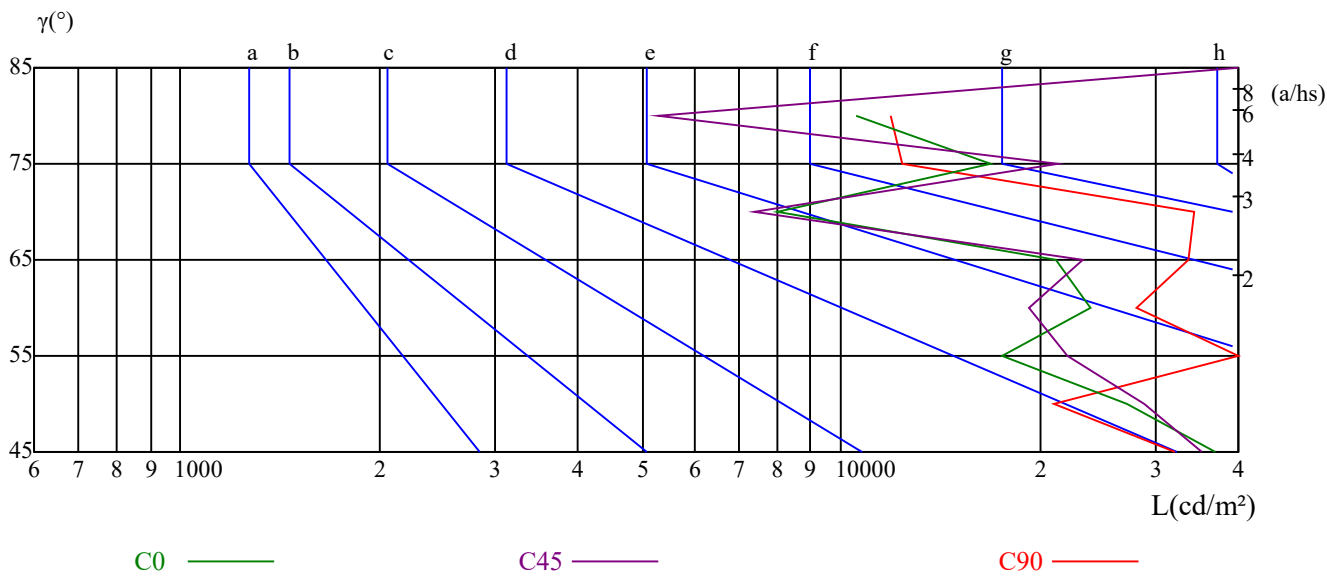
γ	45	50	55	60	65	70	75	80	85
C0	36951	27099	17582	23837	21151	8042	16825	10560	0
C45	35330	28882	21978	19253	23320	7372	21254	5279	65743
C90	32089	21037	45154	27962	33624	34177	12399	11879	0

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
15728	26574	21422	26124	6199	26345	22354	0	33528

Glare Table

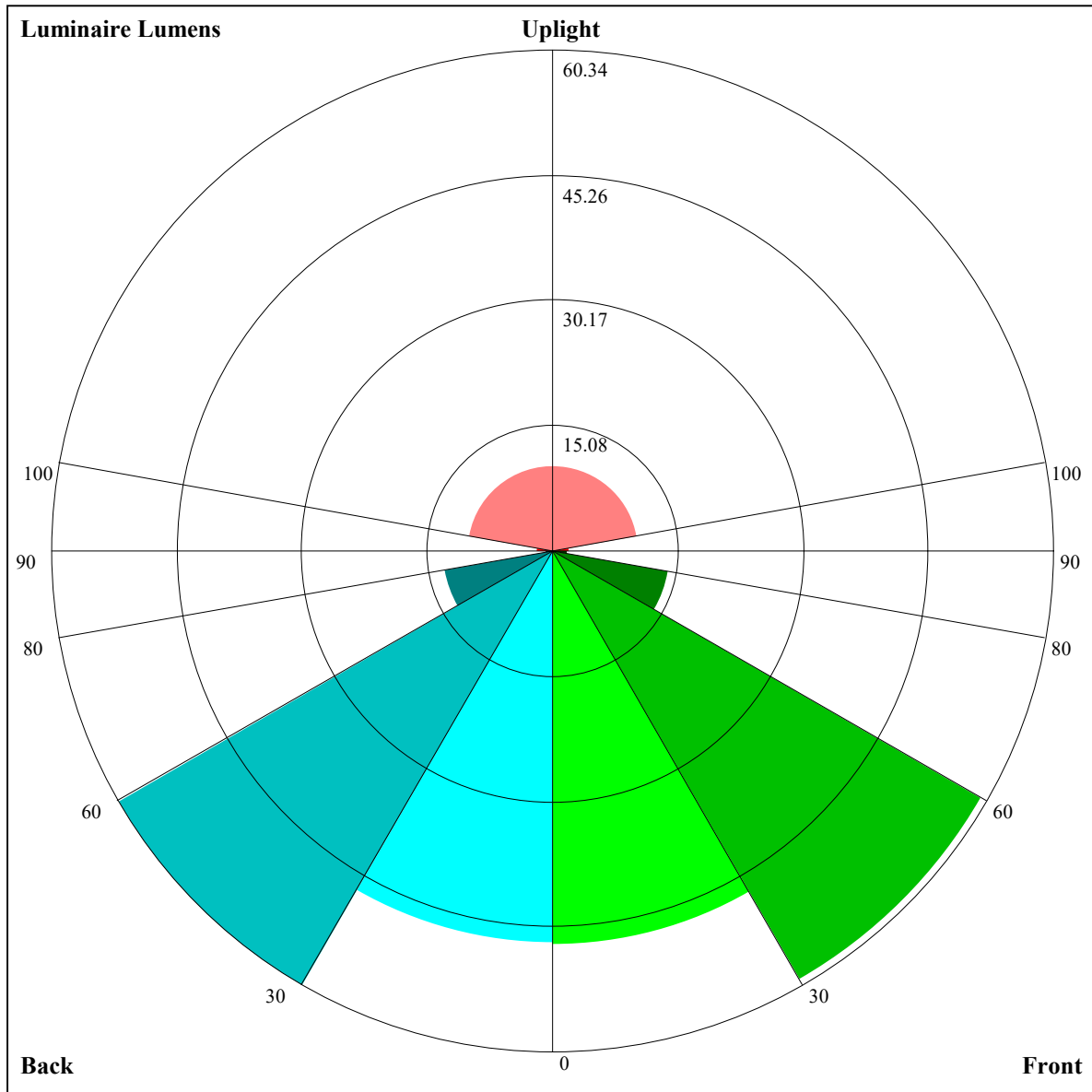
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	17.97	19.31	18.41	19.73	20.16	19.06	20.41	19.50	20.82	21.26
	3H	18.65	19.85	19.11	20.29	20.75	20.76	21.97	21.23	22.41	22.87
	4H	19.00	20.14	19.48	20.58	21.06	21.04	22.17	21.51	22.62	23.10
	6H	19.26	20.31	19.75	20.77	21.28	21.13	22.18	21.62	22.64	23.15
	8H	19.27	20.27	19.76	20.75	21.26	21.12	22.13	21.61	22.60	23.11
	12H	19.24	20.20	19.73	20.68	21.20	21.08	22.04	21.57	22.52	23.05
4H	2H	18.41	19.54	18.89	19.99	20.47	19.34	20.47	19.81	20.92	21.40
	3H	19.11	20.07	19.61	20.55	21.07	21.06	22.02	21.56	22.50	23.02
	4H	19.72	20.56	20.23	21.06	21.62	21.48	22.32	22.00	22.83	23.38
	6H	20.01	20.75	20.55	21.28	21.84	21.59	22.34	22.13	22.87	23.43
	8H	20.08	20.78	20.63	21.31	21.89	21.64	22.33	22.19	22.87	23.44
	12H	20.13	20.78	20.69	21.31	21.92	21.66	22.30	22.22	22.83	23.45
8H	4H	19.91	20.61	20.47	21.15	21.72	21.52	22.22	22.07	22.75	23.33
	6H	20.25	20.83	20.82	21.38	21.99	21.67	22.25	22.24	22.81	23.42
	8H	20.50	21.01	21.10	21.60	22.20	21.86	22.36	22.45	22.96	23.56
	12H	20.78	21.20	21.38	21.80	22.41	22.04	22.46	22.64	23.05	23.67
12H	4H	19.90	20.55	20.46	21.08	21.69	21.50	22.15	22.06	22.68	23.29
	6H	20.36	20.87	20.95	21.46	22.06	21.75	22.25	22.34	22.84	23.44
	8H	20.76	21.18	21.36	21.77	22.39	22.02	22.44	22.62	23.04	23.65
Variation with the observer position at spacings:											
S = 1.0H		0.2/-0.7					0.5/-1.5				
S = 1.5H		1.3/-1.1					1.5/-1.2				
S = 2.0H		2.3/-1.2					1.9/-2.3				
Standard tables:		BK3					BK4				
Uncorrected UGR		8.0					7.3				

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



Luminaire Lumens:

FL=47.47,FM=59.63,FH=14.08,FVH=1.85

BL=47.16,BM=60.34,BH=13.31,BVH=0.89

UL=1.93,UH=10.33

BUG Rating:B0-U2-G0

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	127.25	110.15	119.29	107.36	103.39	110.54	83.90	69.19	69.59
45.0	120.09	120.09	116.91	114.12	105.38	98.62	94.64	71.97	64.82
90.0	115.32	124.86	108.16	119.29	106.57	86.69	89.07	69.99	66.80
135.0	117.30	115.32	110.54	110.54	104.18	91.06	82.31	80.32	55.67
180.0	127.25	118.10	114.92	112.53	110.15	104.58	85.89	73.56	63.62
225.0	120.09	123.67	122.47	108.16	118.10	97.82	89.07	79.93	70.78
270.0	115.32	112.93	106.97	116.11	104.58	107.36	99.81	85.89	69.19
315.0	117.30	125.66	111.74	105.38	104.98	106.17	94.24	87.88	65.21
360.0	127.25	110.15	119.29	107.36	103.39	110.54	83.90	69.19	69.59
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	45.33	30.22	17.50	20.68	15.51	4.77	7.56	3.18	0.00
45.0	43.34	32.21	21.87	16.70	17.10	4.37	9.54	1.59	9.94
90.0	39.37	23.46	44.93	24.26	24.65	20.28	5.57	3.58	0.00
135.0	40.16	41.75	31.41	22.67	12.72	0.40	0.00	0.00	0.00
180.0	58.85	25.05	25.45	27.04	7.56	13.92	15.91	0.00	6.76
225.0	50.10	46.52	29.43	22.67	12.33	5.57	28.63	5.57	2.78
270.0	50.10	33.40	20.68	29.03	14.32	15.91	0.00	1.59	0.00
315.0	56.86	40.96	39.37	27.44	20.68	20.28	9.15	13.92	7.56
360.0	45.33	30.22	17.50	20.68	15.51	4.77	7.56	3.18	0.00
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	4.37	0.00	0.00	4.37	3.18	0.00	3.18	0.00	0.00
45.0	0.00	1.59	5.96	3.18	0.00	9.15	0.00	0.00	8.75
90.0	0.00	0.00	0.40	0.00	0.00	12.33	9.15	0.00	0.00
135.0	0.00	0.00	2.78	3.18	0.00	1.59	0.40	0.00	0.00
180.0	0.00	0.40	3.98	0.00	0.00	3.58	0.00	0.00	0.00
225.0	0.80	14.71	0.00	0.00	0.00	4.37	0.00	0.00	0.00
270.0	0.00	0.00	0.40	0.00	0.00	0.00	3.98	0.00	0.00
315.0	0.00	0.40	0.00	1.19	0.00	7.56	2.39	2.78	0.00
360.0	4.37	0.00	0.00	4.37	3.18	0.00	3.18	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	2.39	0.00	2.39	0.00	0.00	0.00	0.00	0.00
45.0	3.58	0.00	3.98	6.36	0.00	0.00	0.00	3.18	2.39
90.0	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.40	0.00
135.0	1.99	7.56	0.00	7.95	1.99	9.15	0.00	0.00	9.54
180.0	0.00	0.00	4.77	5.57	5.57	0.00	0.00	0.00	0.00
225.0	0.00	0.00	0.00	13.52	0.00	3.98	11.93	0.00	5.17
270.0	0.00	0.00	3.58	0.00	4.37	0.00	0.40	0.00	1.99
315.0	1.99	5.96	0.00	5.96	0.00	0.00	0.40	0.00	0.00
360.0	0.00	2.39	0.00	2.39	0.00	0.00	0.00	0.00	0.00
C/γ(°)	180.0								
0.0	0.00								
45.0	4.77								
90.0	6.76								
135.0	0.40								
180.0	0.00								
225.0	4.77								
270.0	6.76								
315.0	0.40								
360.0	0.00								