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Nata

LumCAT: 2-1121-A4
Luminaire: 99.02.73.172+92.76.365.00
Report No: NATA0100
Test No: GC2018082813
LampCAT: SAMSUNG LC026D
Lamp flux(lm): 2486.0
Number of Lamps: 1
Length(mm): 71
Phm Type: C

Voltage(V): 34.5000
Current(A): 0.5000
Power (W): 17.2500
PF: 0.0000
Ballast type: DC
Width(mm): 71
Height(mm): 0

Photometric Results

Lumens(lm): 2310.08
Efficiency(%): 92.92%
Lumens(lm)/Power(W): 136.10
Central intensity(cd): 6671.184
Maximum intensity(cd): 6671.184
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=29.0
 [C90/270]Total=29.0
Field angle(10%Imax): [C0/180]Total=66.1
 [C90/270]Total=66.1
Maximum s/h(1/2): C0_180=0.49 C90_270=0.49
Maximum s/h(1/4): C0_180=0.47 C90_270=0.47
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 94.44%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.132%

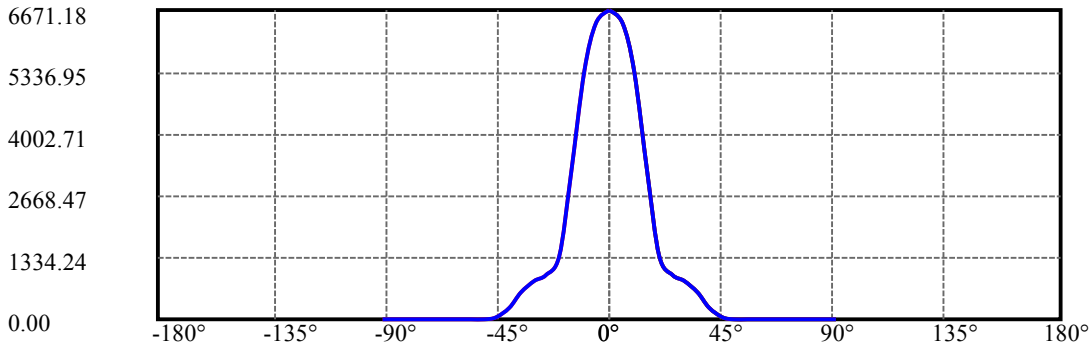
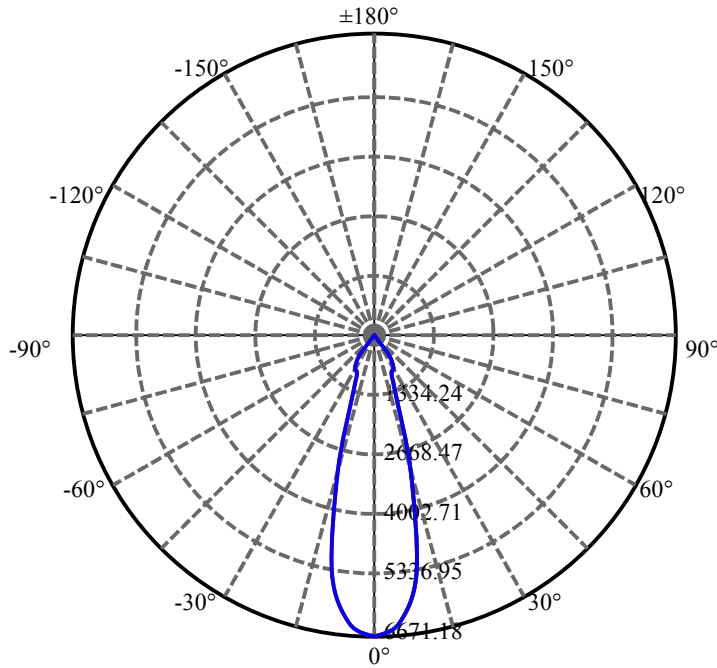
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6671.184	39.895	39.895	1.605%	1.727%
5.0	6388.813	305.215	345.11	12.277%	14.939%
10.0	5334.965	507.798	852.908	20.426%	36.921%
15.0	3116.812	442.177	1295.085	17.787%	56.062%
20.0	1365.819	256.056	1551.141	10.300%	67.147%
25.0	944.857	218.879	1770.02	8.804%	76.622%
30.0	830.409	227.589	1997.609	9.155%	86.474%
35.0	564.775	177.565	2175.173	7.143%	94.160%
40.0	228.250	80.421	2255.594	3.235%	97.641%
45.0	23.998	9.301	2264.895	.374%	98.044%
50.0	12.429	5.219	2270.114	.210%	98.270%
55.0	11.452	5.142	2275.256	.207%	98.492%
60.0	10.949	5.198	2280.454	.209%	98.717%
65.0	10.605	5.268	2285.722	.212%	98.946%
70.0	10.371	5.342	2291.064	.215%	99.177%
75.0	10.185	5.393	2296.457	.217%	99.410%
80.0	10.062	5.431	2301.888	.218%	99.645%
85.0	10.048	5.487	2307.375	.221%	99.883%
90.0	9.876	2.707	2310.082	.109%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1997.61	80.35%	86.47%
0-40	2255.59	90.73%	97.64%
0-60	2280.45	91.73%	98.72%
0-90	2307.38	92.81%	99.88%
0-120	2307.38	92.81%	99.88%
0-180	2310.08	92.92%	100.00%
60-90	32.12	1.29%	1.39%
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%
0-26.71	1848.07	74.34%	80.00%

ZONAL LUMEN SUMMARY

0-10	852.91
10-20	698.23
20-30	446.47
30-40	257.99
40-50	14.52
50-60	10.34
60-70	10.61
70-80	10.82
80-90	5.49
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



C0(Max): —————

C0/C180: —————

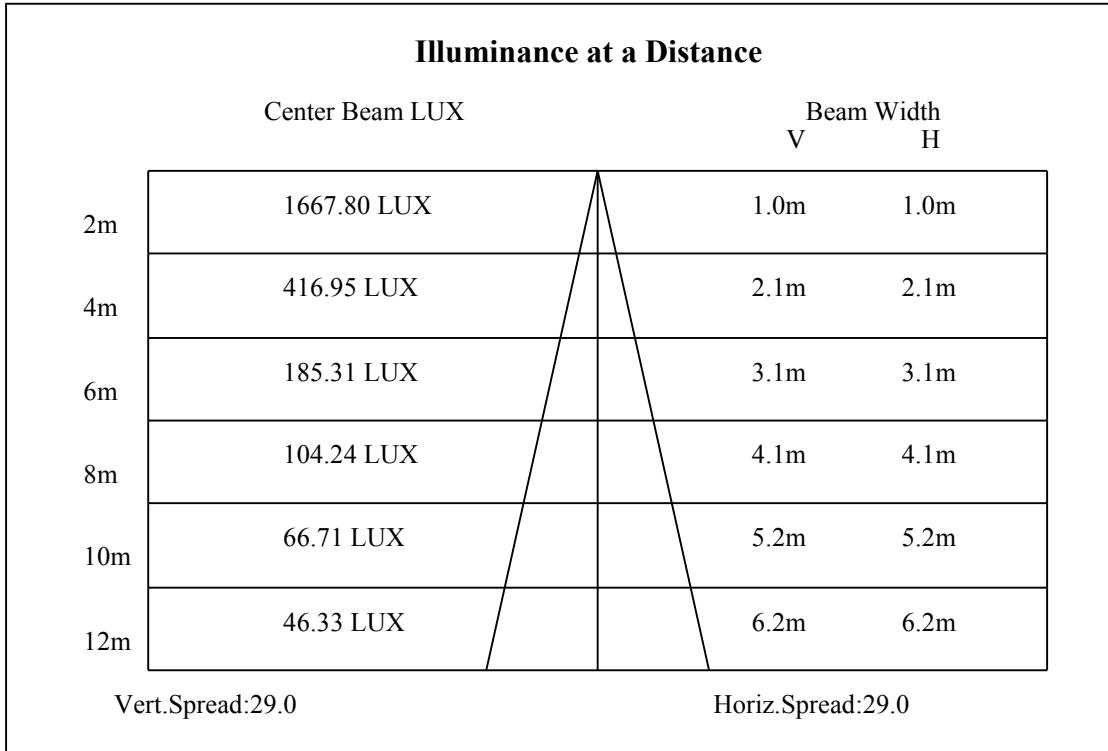
C90/C270: —————

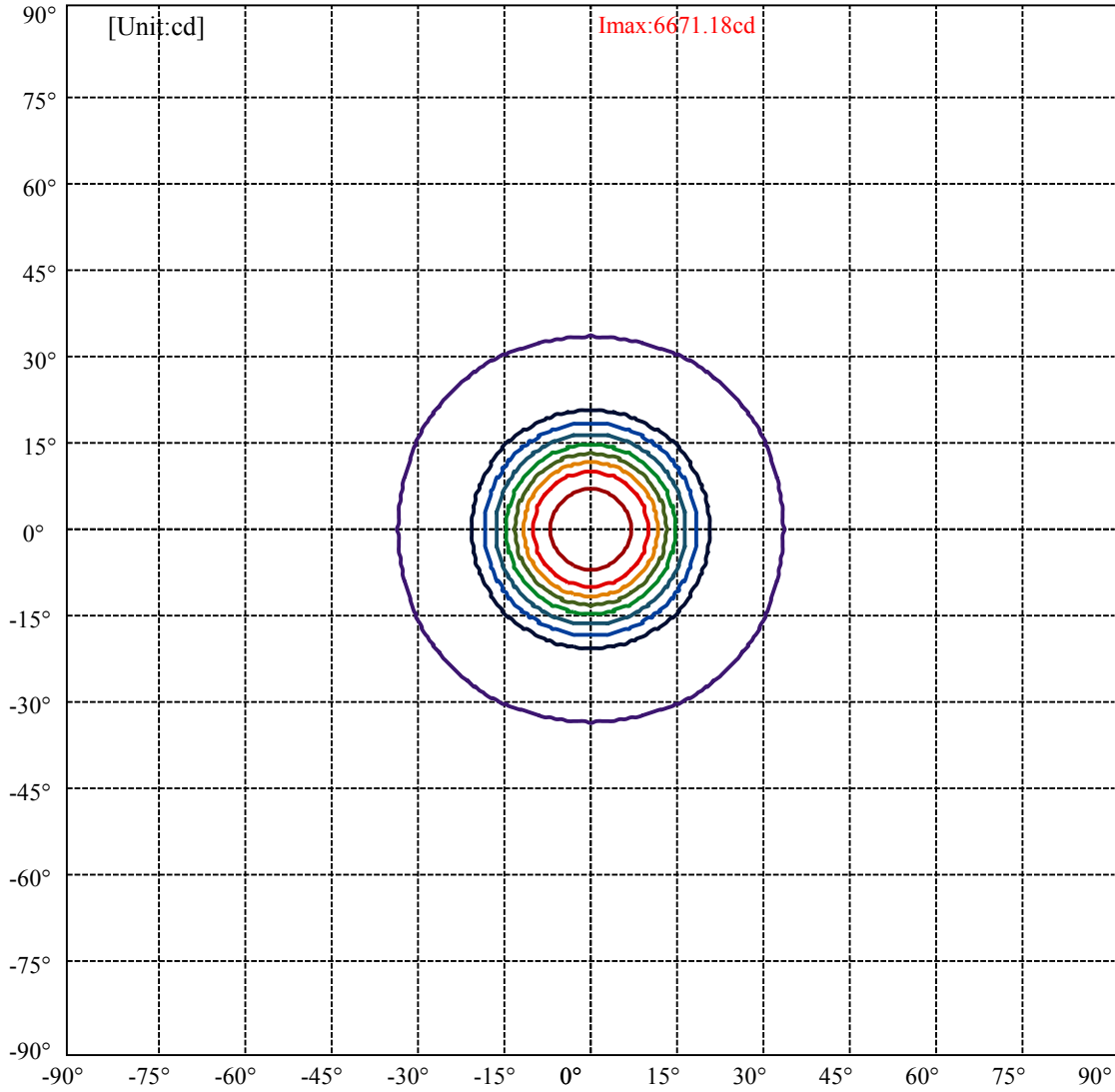
Field angle(10%Imax):C0/180Left:33.1 Right:33.1

:C90/270Left:33.1 Right:33.1

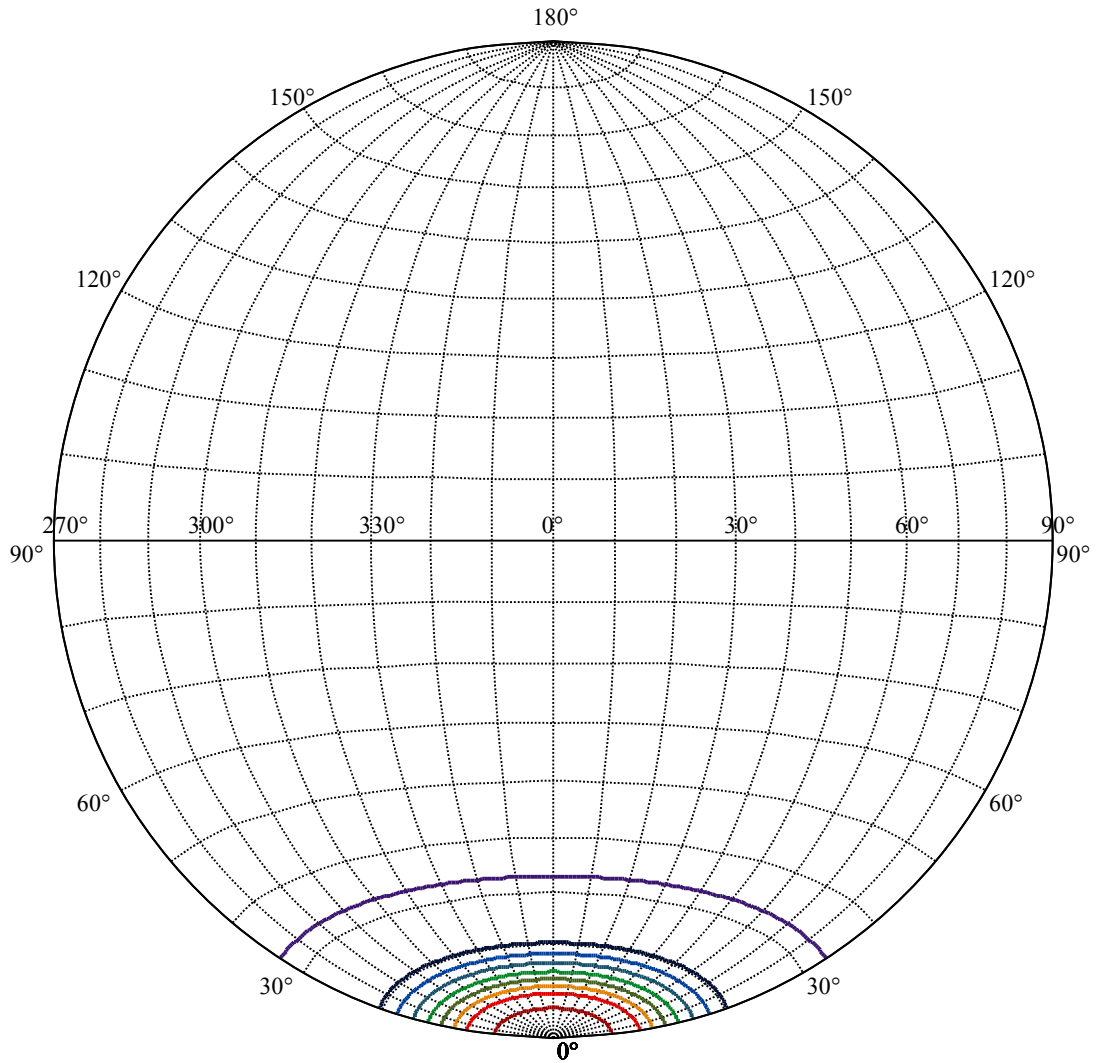
Beam Angle(50%Imax):C0/180Left:14.5 Right:14.5

:C90/270Left:14.5 Right:14.5





(10%I _{max}) 667.118	—
(20%I _{max}) 1334.24	—
(30%I _{max}) 2001.36	—
(40%I _{max}) 2668.47	—
(50%I _{max}) 3335.59	—
(60%I _{max}) 4002.71	—
(70%I _{max}) 4669.83	—
(80%I _{max}) 5336.95	—
(90%I _{max}) 6004.07	—



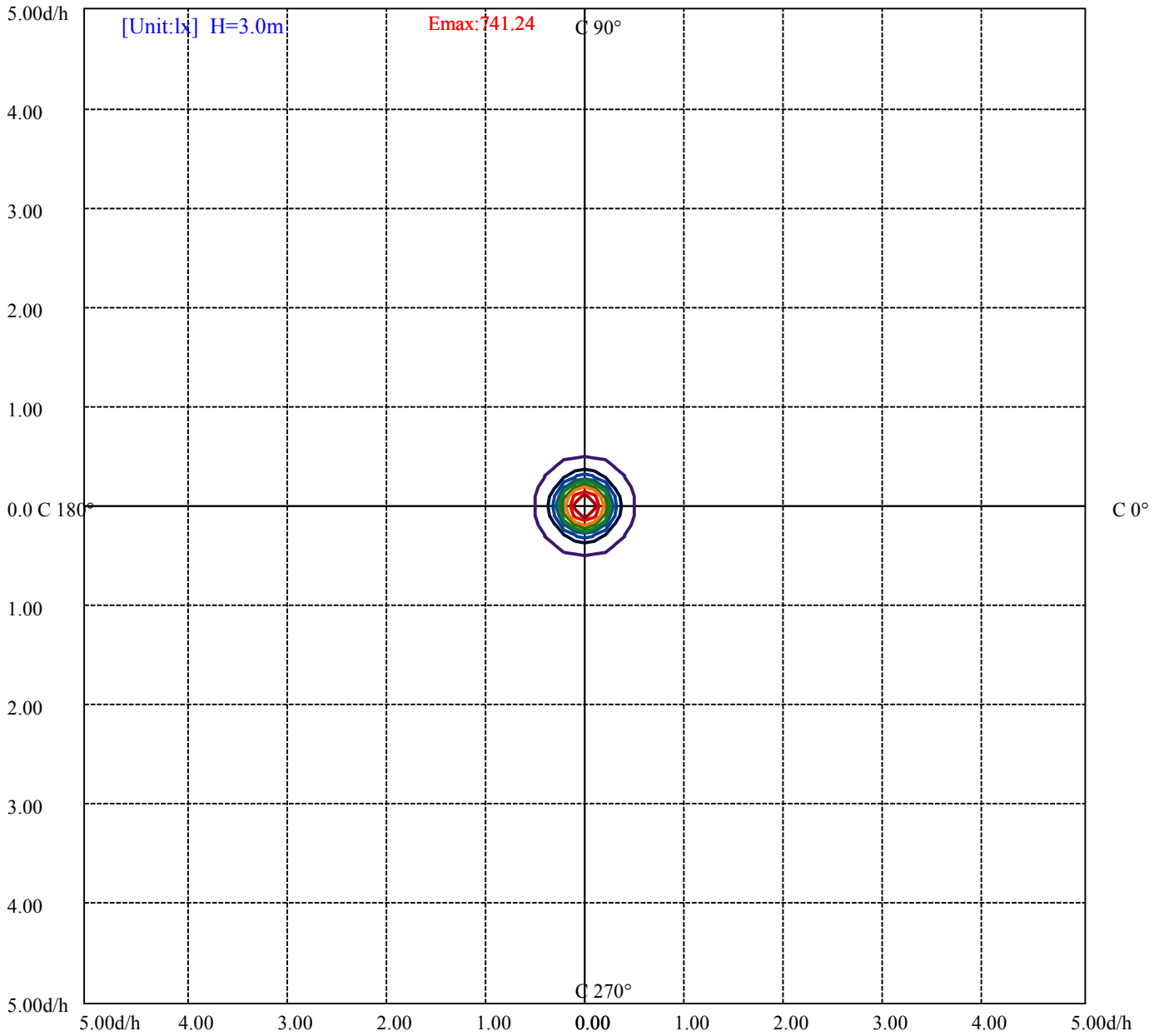
House

[Unit:cd]

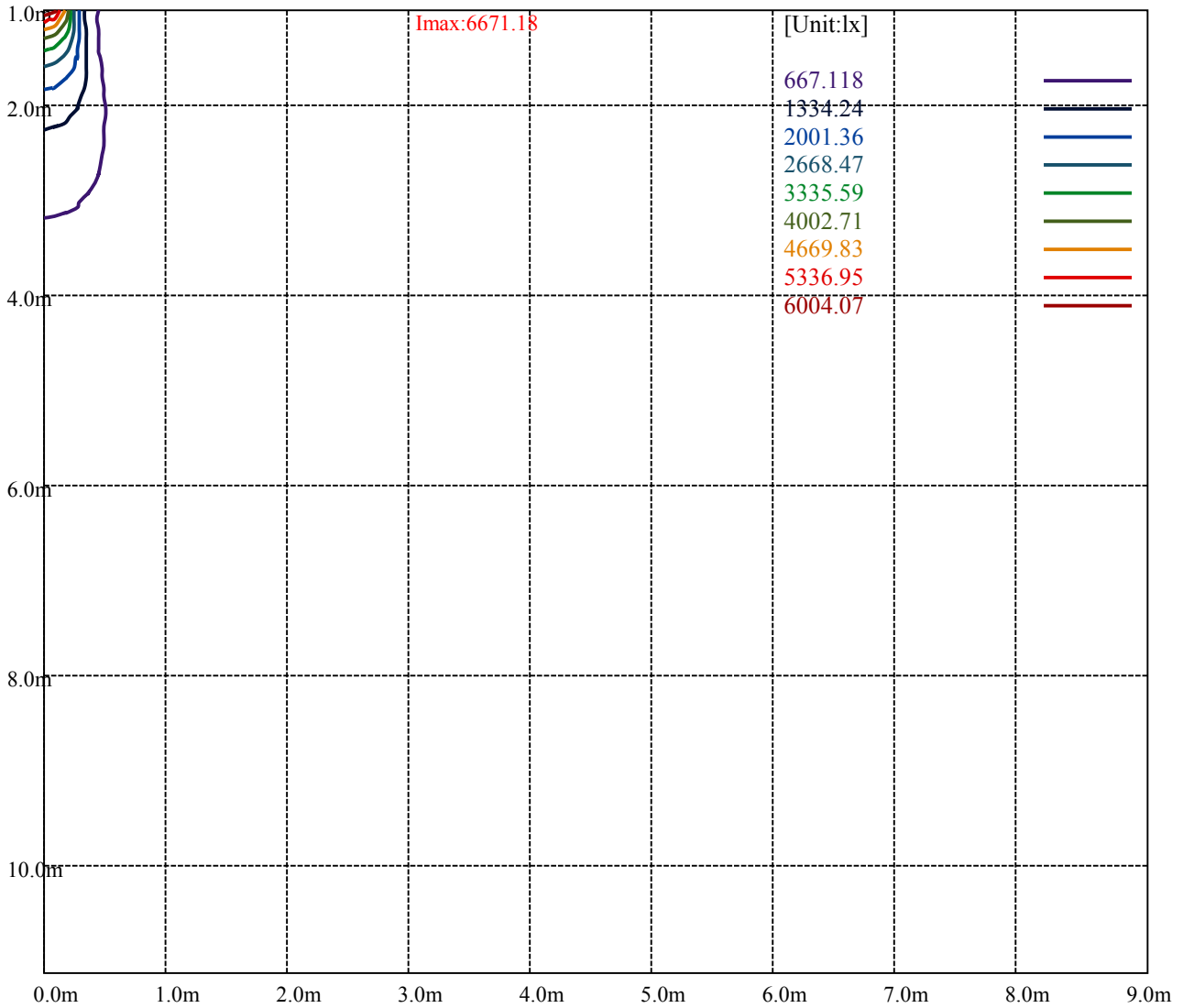
Road

Imax:6671.18

(10%Imax) 667.118	—
(20%Imax) 1334.24	—
(30%Imax) 2001.36	—
(40%Imax) 2668.47	—
(50%Imax) 3335.59	—
(60%Imax) 4002.71	—
(70%Imax) 4669.83	—
(80%Imax) 5336.95	—
(90%Imax) 6004.07	—



- (10%Emax) 74.12422
- (20%Emax) 148.2489
- (30%Emax) 222.3722
- (40%Emax) 296.4967
- (50%Emax) 370.6211
- (60%Emax) 444.7455
- (70%Emax) 518.8689
- (80%Emax) 592.9933
- (90%Emax) 667.1178



Luminance Table

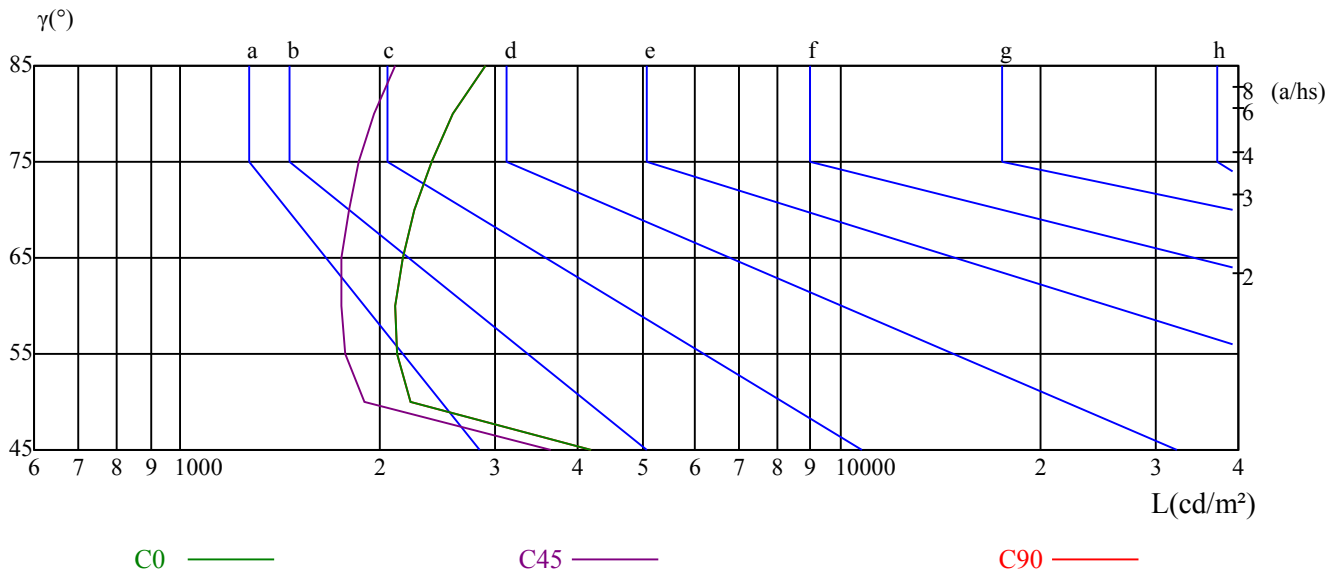
γ	45	50	55	60	65	70	75	80	85
C0	4193	2228	2124	2120	2165	2258	2395	2592	2887
C45	3626	1898	1781	1749	1755	1794	1860	1962	2120
C90	4193	2228	2124	2120	2165	2258	2395	2592	2887

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4978	4978	4978	7807	7807	7807	22870	22870	22870

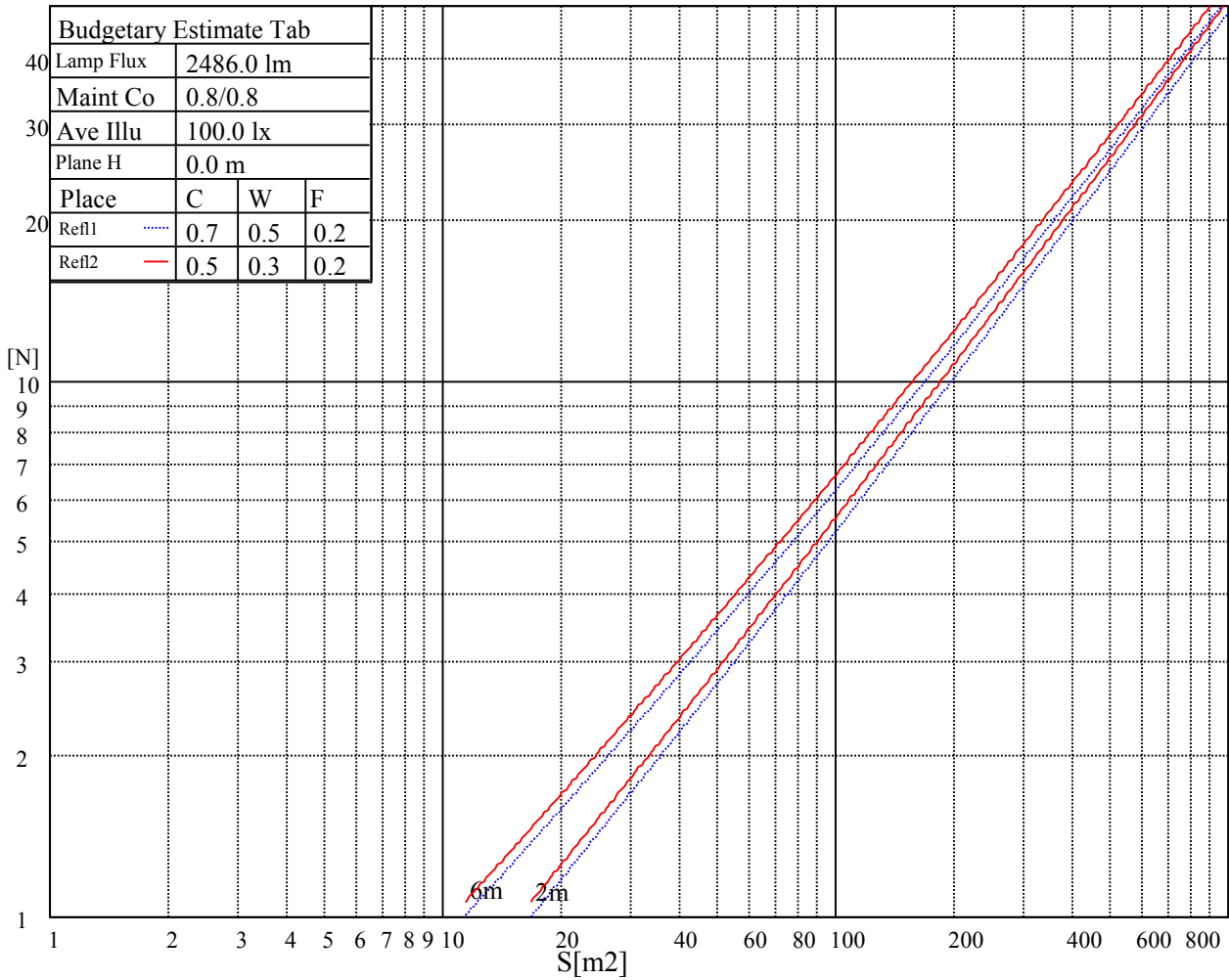
Glare Table

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

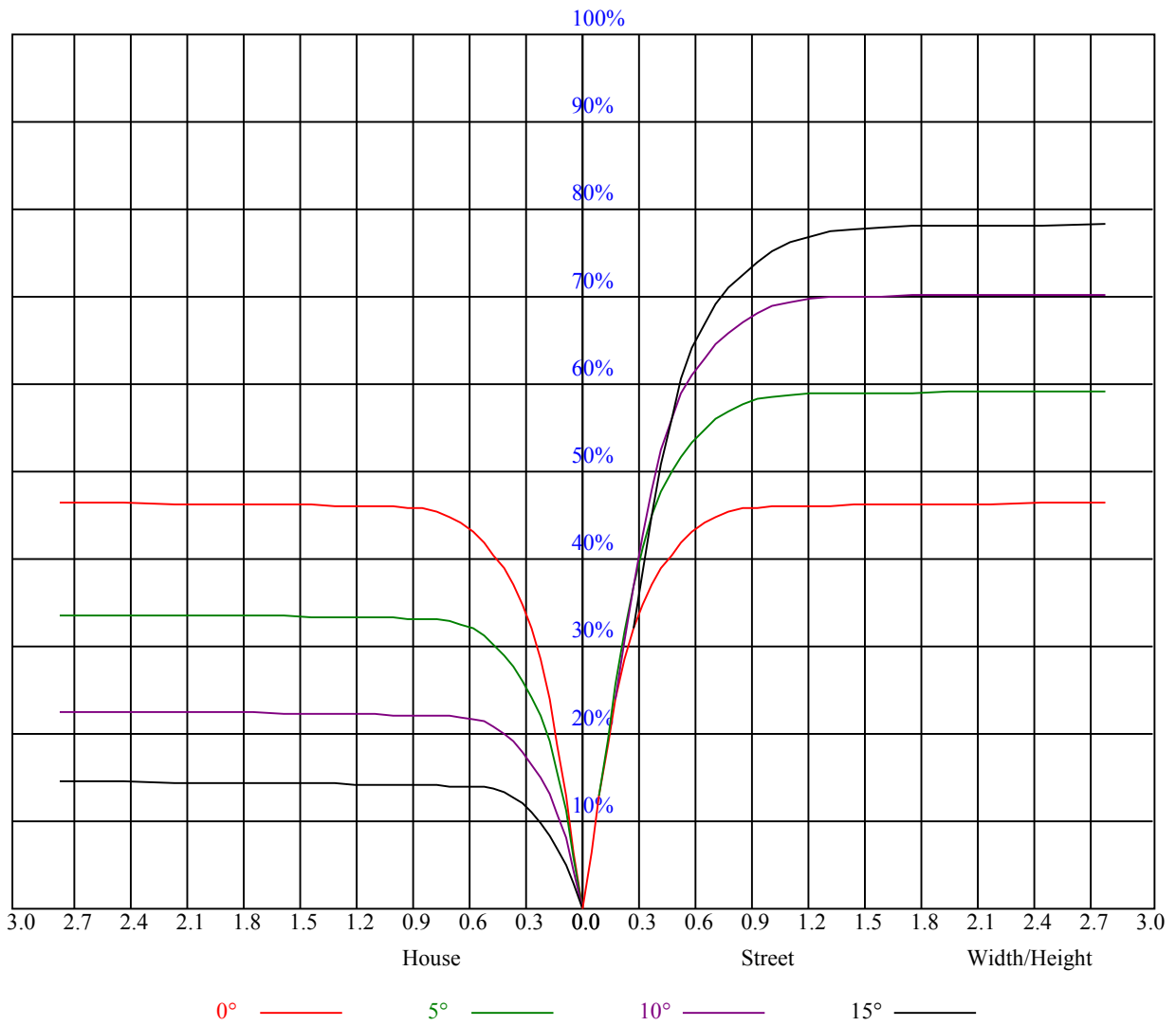
Luminance Limiting Curve



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	0.91	1.82	1.27	2.13	2.45	0.92	1.84	1.28	2.15	2.46
	3H	3.18	3.99	3.56	4.32	4.69	3.19	4.00	3.58	4.34	4.71
	4H	4.41	5.16	4.82	5.52	5.91	4.43	5.18	4.84	5.53	5.92
	6H	5.71	6.40	6.13	6.78	7.17	5.74	6.42	6.16	6.80	7.20
	8H	6.37	7.02	6.81	7.41	7.82	6.39	7.03	6.83	7.43	7.84
	12H	7.40	8.02	7.84	8.40	8.83	7.40	8.01	7.83	8.39	8.83
4H	2H	1.40	2.15	1.81	2.50	2.89	1.41	2.16	1.82	2.51	2.90
	3H	3.96	4.58	4.38	4.99	5.40	3.98	4.59	4.39	5.00	5.41
	4H	5.37	5.92	5.81	6.34	6.79	5.38	5.93	5.82	6.36	6.81
	6H	6.77	7.24	7.24	7.69	8.17	6.79	7.26	7.26	7.71	8.19
	8H	7.54	7.98	8.02	8.43	8.91	7.56	8.00	8.04	8.45	8.92
8H	12H	8.57	8.94	9.06	9.43	9.91	8.56	8.93	9.05	9.42	9.90
	4H	5.80	6.24	6.28	6.69	7.17	5.82	6.25	6.29	6.71	7.18
	6H	7.45	7.79	7.96	8.30	8.78	7.46	7.81	7.98	8.31	8.80
	8H	8.37	8.68	8.91	9.20	9.70	8.38	8.69	8.92	9.21	9.71
12H	12H	9.53	9.79	10.05	10.29	10.87	9.52	9.78	10.04	10.28	10.86
	4H	5.89	6.27	6.39	6.76	7.24	5.91	6.28	6.40	6.77	7.25
	6H	7.82	7.92	8.16	8.40	8.95	7.84	7.94	8.17	8.41	8.96
	8H	8.64	8.90	9.16	9.40	9.98	8.65	8.91	9.17	9.41	9.99
Variation with the observer position at spacings:											
S = 1.0H	5.0/-8.6					5.0/-8.6					
S = 1.5H	7.4/-6.8					7.4/-6.8					
S = 2.0H	9.1/-5.7					9.1/-5.7					
Standard tables:	BK1					BK1					
Uncorrected UGR	-1.7					-1.7					



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	1.10	1.10	1.10	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.94
1	1.04	1.01	0.99	1.02	1.00	0.97	0.98	0.96	0.94	0.94	0.93	0.92	0.91	0.90	0.89	0.87
2	0.98	0.95	0.92	0.97	0.93	0.91	0.94	0.91	0.89	0.91	0.89	0.87	0.88	0.87	0.85	0.83
3	0.93	0.89	0.86	0.92	0.88	0.85	0.90	0.87	0.84	0.88	0.85	0.83	0.85	0.83	0.81	0.80
4	0.89	0.85	0.81	0.88	0.84	0.81	0.86	0.83	0.80	0.84	0.82	0.79	0.83	0.80	0.78	0.77
5	0.85	0.81	0.78	0.85	0.80	0.77	0.83	0.79	0.77	0.82	0.78	0.76	0.80	0.77	0.75	0.74
6	0.82	0.78	0.74	0.81	0.77	0.74	0.80	0.76	0.73	0.79	0.76	0.73	0.78	0.75	0.73	0.71
7	0.79	0.74	0.71	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.69
8	0.76	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.68	0.67
9	0.74	0.69	0.66	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.65
10	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.63



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	6683.30	6258.81	5194.57	3208.14	1390.17	943.12	822.54	524.69	281.89
45.0	6678.34	6185.04	5065.74	2556.27	1183.71	916.69	808.23	478.99	115.29
90.0	6660.17	6166.87	4522.33	2338.25	1079.44	894.06	798.15	460.49	114.68
135.0	6662.93	6483.99	5528.21	3230.71	1446.33	948.62	839.06	597.36	294.00
180.0	6683.30	6542.90	5622.91	3424.51	1514.60	952.09	838.45	601.00	215.44
225.0	6678.34	6559.97	5723.11	3590.78	1559.75	969.98	847.32	646.14	291.96
270.0	6660.17	6568.78	5809.55	3709.15	1654.44	999.27	868.79	681.05	344.65
315.0	6662.93	6344.15	5213.29	2876.70	1098.10	935.02	820.73	528.49	168.09
360.0	6683.30	6258.81	5194.57	3208.14	1390.17	943.12	822.54	524.69	281.89

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	18.50	12.55	11.51	11.01	10.63	10.41	10.24	10.13	10.02
45.0	15.03	11.95	11.29	10.85	10.52	10.30	10.13	10.02	10.02
90.0	15.09	11.84	11.12	10.74	10.46	10.30	10.13	10.02	10.30
135.0	23.34	12.28	11.45	10.96	10.63	10.41	10.19	10.08	10.08
180.0	24.72	12.28	11.51	10.96	10.63	10.35	10.19	10.08	9.97
225.0	34.13	12.61	11.51	10.96	10.57	10.30	10.19	10.02	9.91
270.0	39.31	13.49	11.73	11.12	10.74	10.52	10.24	10.08	10.02
315.0	21.86	12.44	11.51	11.01	10.68	10.41	10.19	10.08	10.08
360.0	18.50	12.55	11.51	11.01	10.63	10.41	10.24	10.13	10.02

C/γ(°)	90.0
0.0	9.86
45.0	9.86
90.0	9.91
135.0	9.91
180.0	9.86
225.0	9.86
270.0	9.86
315.0	9.91
360.0	9.86