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Nata

LumCAT: 4-2220-A	
Luminaire: BJB47.319.2030	
Report No: NT2017092011	Voltage(V): 52.7000
Test No: GC2017092011	Current(A): 0.8000
LampCAT: SEOUL SAWx22	Power (W): 42.1600
Lamp flux(lm): 5814.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 100	Width(mm): 100
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 5160.11
Efficiency(%): 88.75%
Lumens(lm)/Power(W): 122.39
Central intensity(cd): 16832.120
Maximum intensity(cd): 16832.120
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=27.3
 [C90/270]Total=27.3
Field angle(10%Imax): [C0/180]Total=61.5
 [C90/270]Total=61.5
Maximum s/h(1/2): C0_180=0.46 C90_270=0.46
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(%): 90.40%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.932%

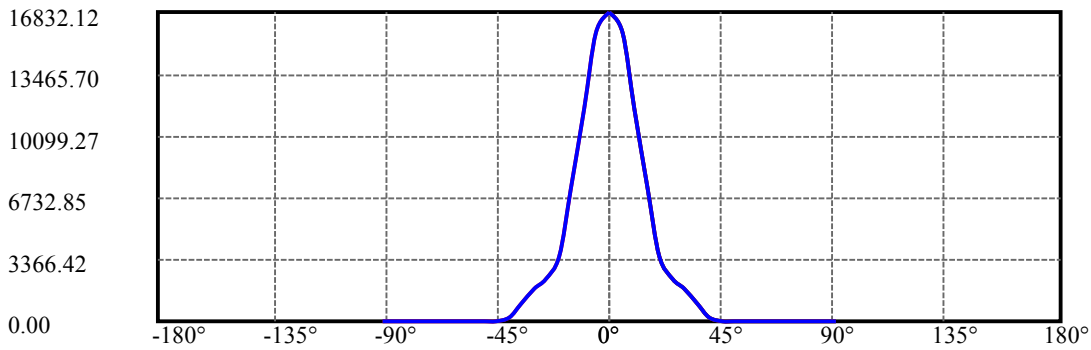
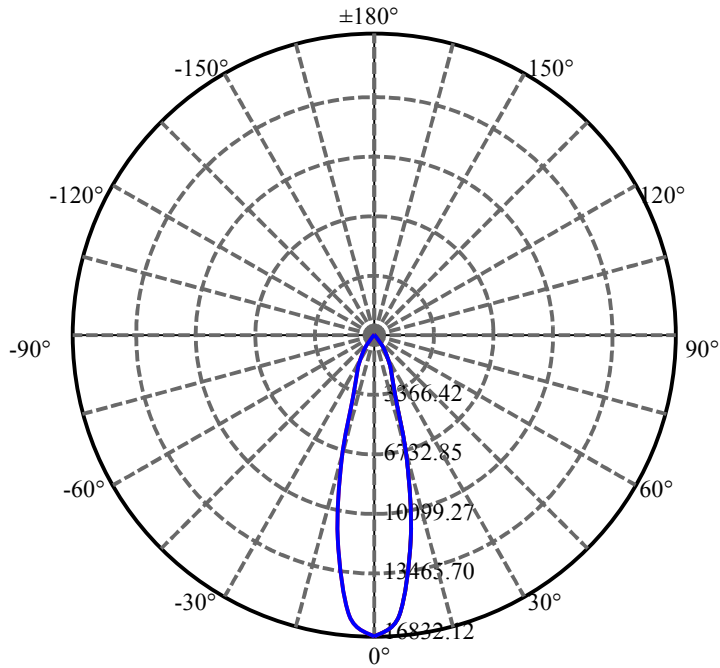
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	16832.117	100.659	100.659	1.731%	1.951%
5.0	15729.613	751.456	852.115	12.925%	16.514%
10.0	11585.656	1102.758	1954.873	18.967%	37.884%
15.0	7223.606	1024.801	2979.675	17.626%	57.744%
20.0	3596.422	674.236	3653.911	11.597%	70.811%
25.0	2337.970	541.597	4195.508	9.315%	81.307%
30.0	1815.210	497.492	4693	8.557%	90.948%
35.0	914.356	287.472	4980.472	4.944%	96.519%
40.0	191.610	67.511	5047.984	1.161%	97.827%
45.0	34.369	13.321	5061.305	.229%	98.085%
50.0	26.276	11.033	5072.338	.190%	98.299%
55.0	24.569	11.032	5083.369	.190%	98.513%
60.0	23.667	11.235	5094.604	.193%	98.731%
65.0	23.082	11.467	5106.071	.197%	98.953%
70.0	22.752	11.719	5117.79	.202%	99.180%
75.0	22.497	11.911	5129.702	.205%	99.411%
80.0	23.103	12.471	5142.173	.215%	99.652%
85.0	22.084	12.059	5154.232	.207%	99.886%
90.0	21.451	5.879	5160.112	.101%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	4693.00	80.72%	90.95%
0-40	5047.98	86.82%	97.83%
0-60	5094.60	87.63%	98.73%
0-90	5154.23	88.65%	99.89%
0-120	5154.23	88.65%	99.89%
0-180	5160.11	88.75%	100.00%
60-90	70.86	1.22%	1.37%
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%
0-24.38	4128.09	71.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	1954.87
10-20	1699.04
20-30	1039.09
30-40	354.98
40-50	24.35
50-60	22.27
60-70	23.19
70-80	24.38
80-90	12.06
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: —————

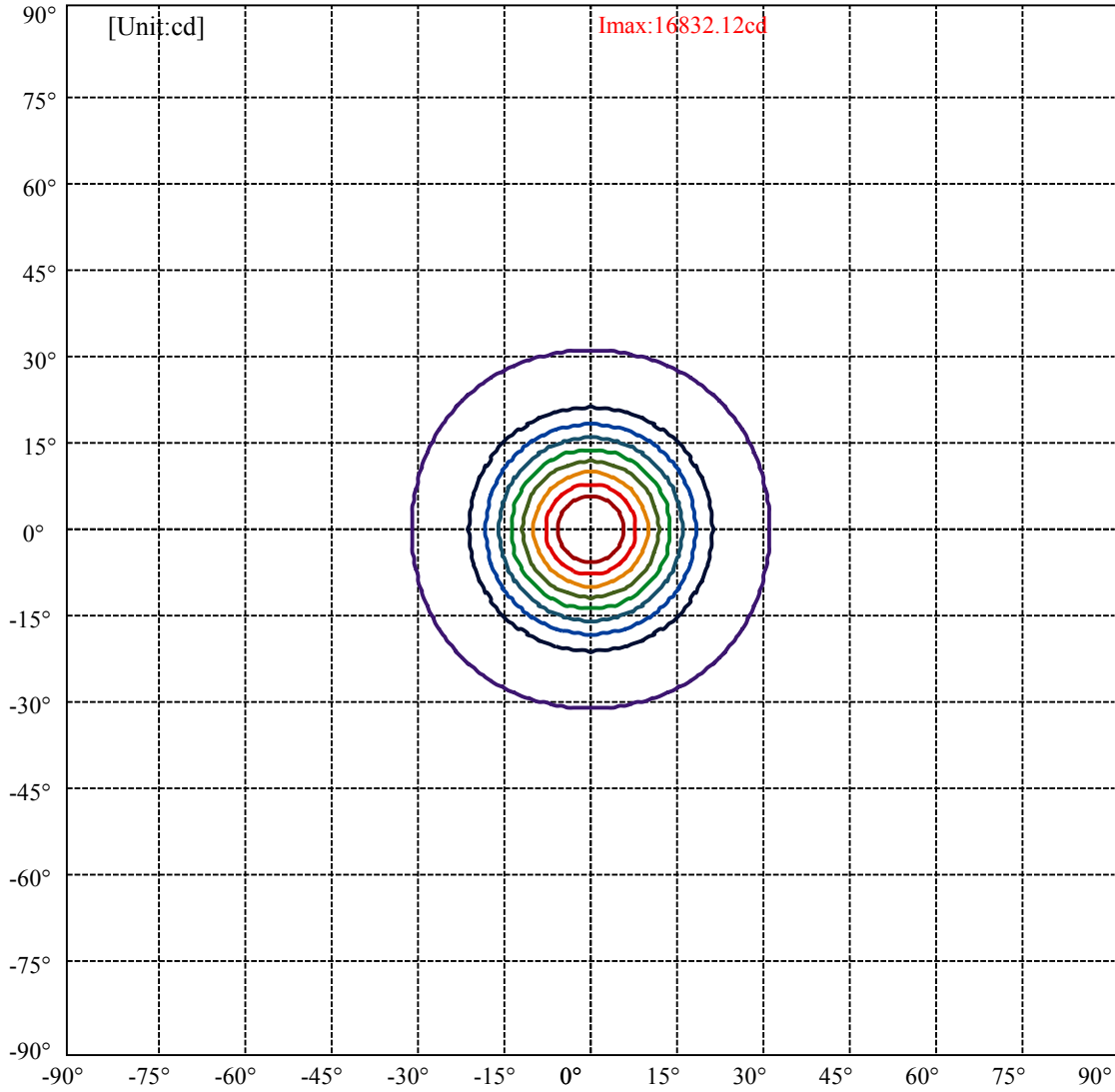
C90/C270: —————

Field angle(10%Imax):C0/180Left:30.7 Right:30.7

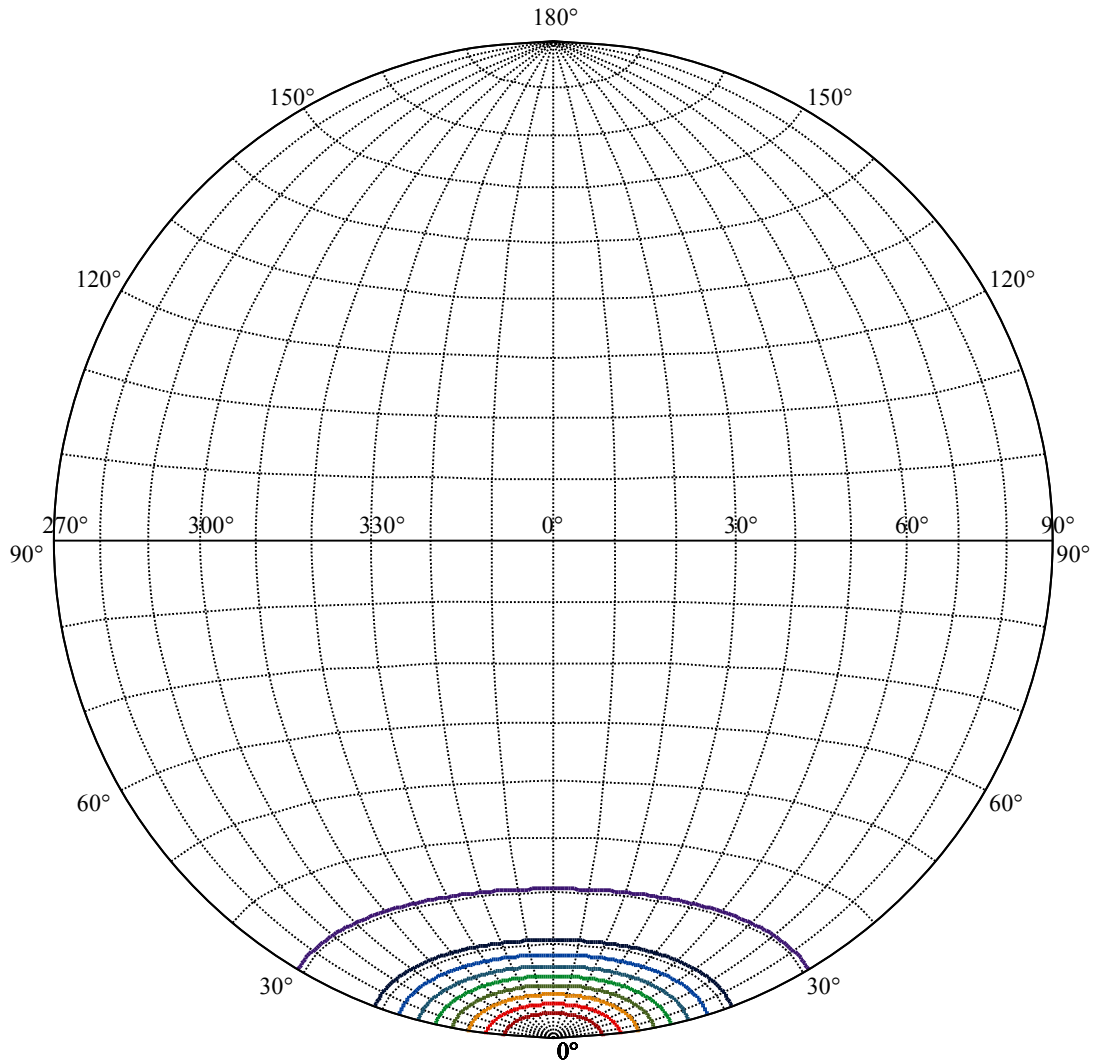
:C90/270Left:30.7 Right:30.7

Beam Angle(50%Imax):C0/180Left:13.6 Right:13.6

:C90/270Left:13.6 Right:13.6



(10%Imax) 1683.21	—
(20%Imax) 3366.42	—
(30%Imax) 5049.64	—
(40%Imax) 6732.85	—
(50%Imax) 8416.06	—
(60%Imax) 10099.3	—
(70%Imax) 11782.5	—
(80%Imax) 13465.7	—
(90%Imax) 15148.9	—



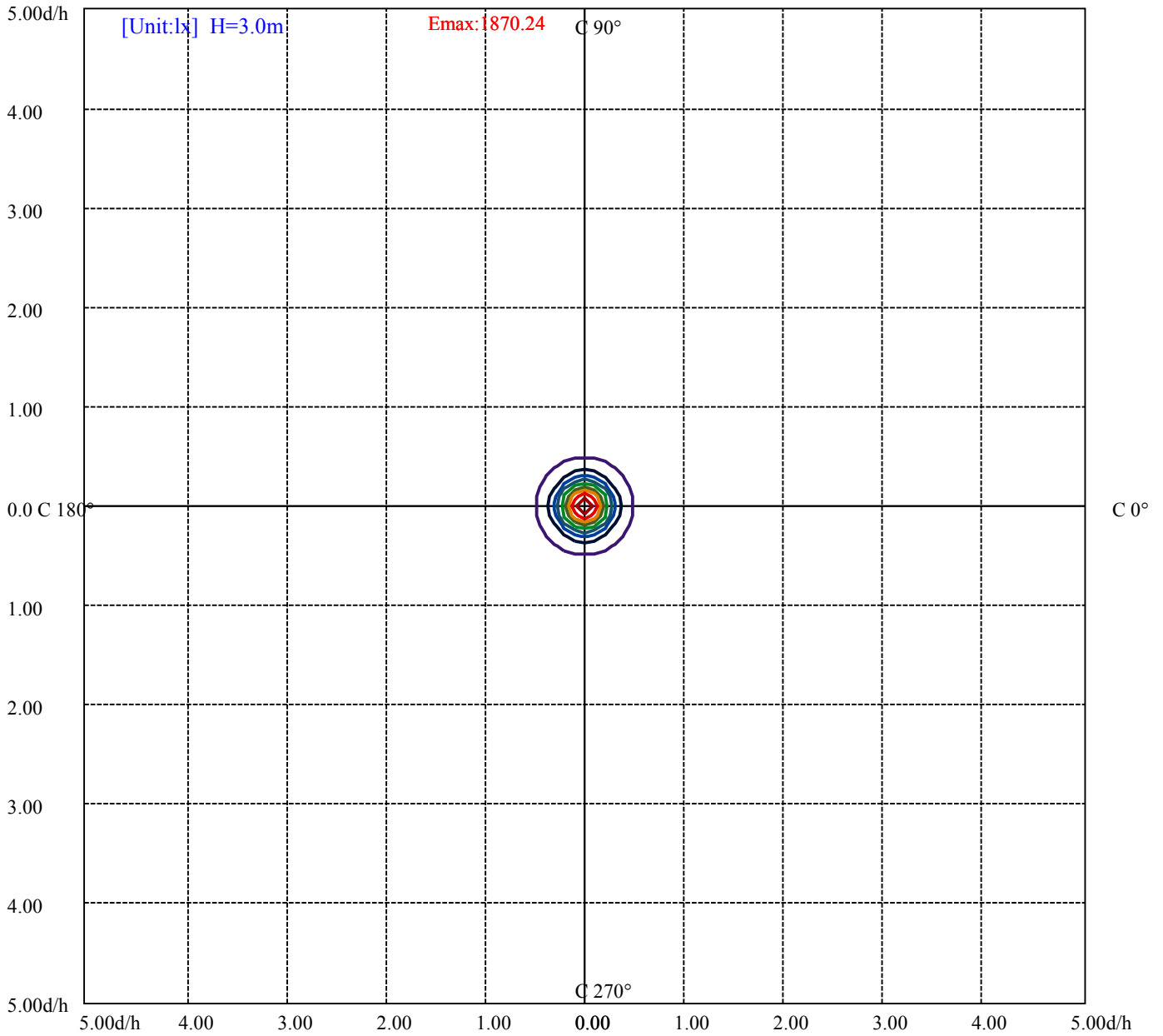
House

[Unit:cd]

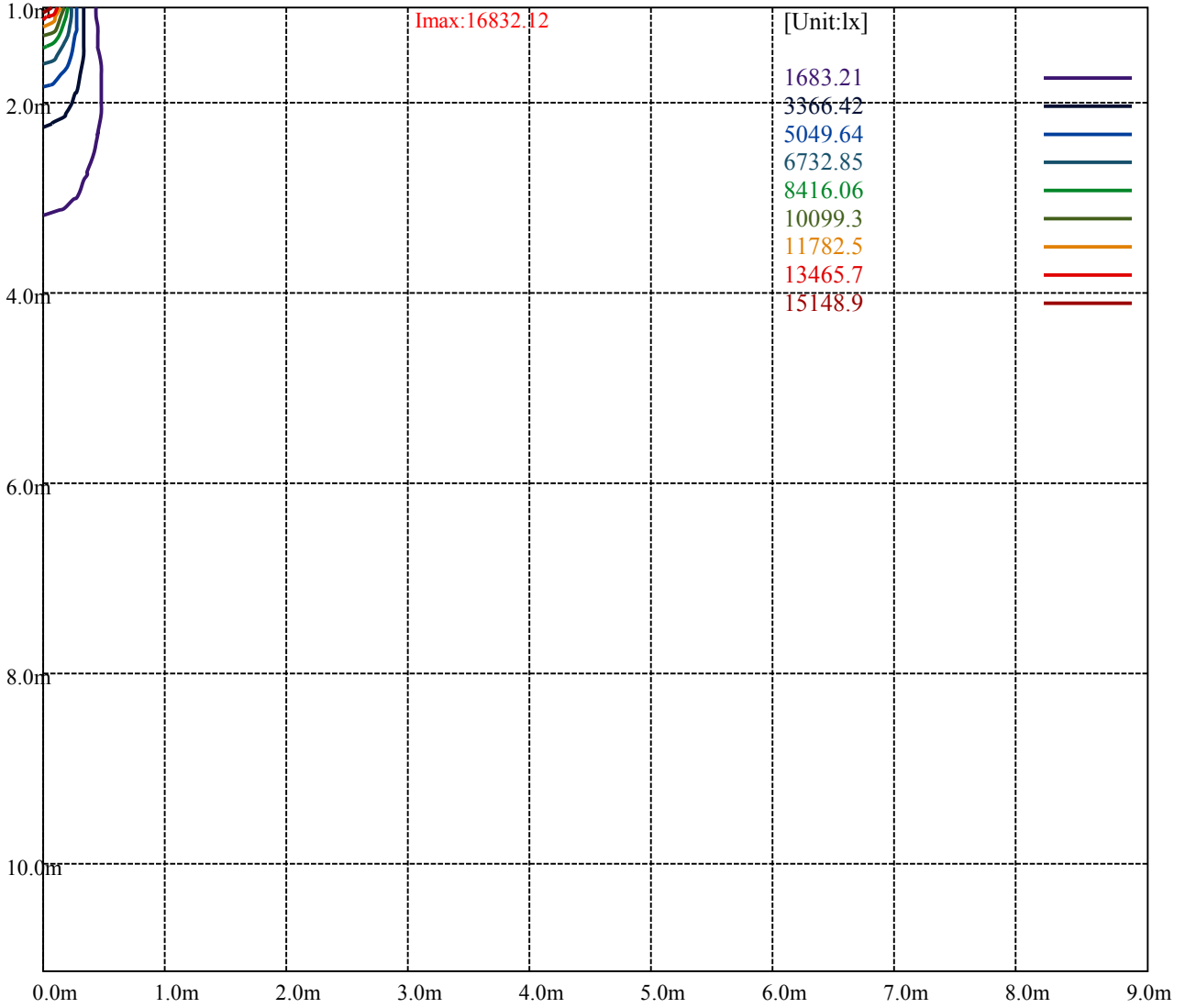
Road

Imax:16832.12

(10%Imax) 1683.21	—
(20%Imax) 3366.42	—
(30%Imax) 5049.64	—
(40%Imax) 6732.85	—
(50%Imax) 8416.06	—
(60%Imax) 10099.3	—
(70%Imax) 11782.5	—
(80%Imax) 13465.7	—
(90%Imax) 15148.9	—



(10%Emax) 187.0233	—
(20%Emax) 374.0467	—
(30%Emax) 561.07	—
(40%Emax) 748.0922	—
(50%Emax) 935.1155	—
(60%Emax) 1122.144	—
(70%Emax) 1309.167	—
(80%Emax) 1496.189	—
(90%Emax) 1683.211	—



Luminance Table

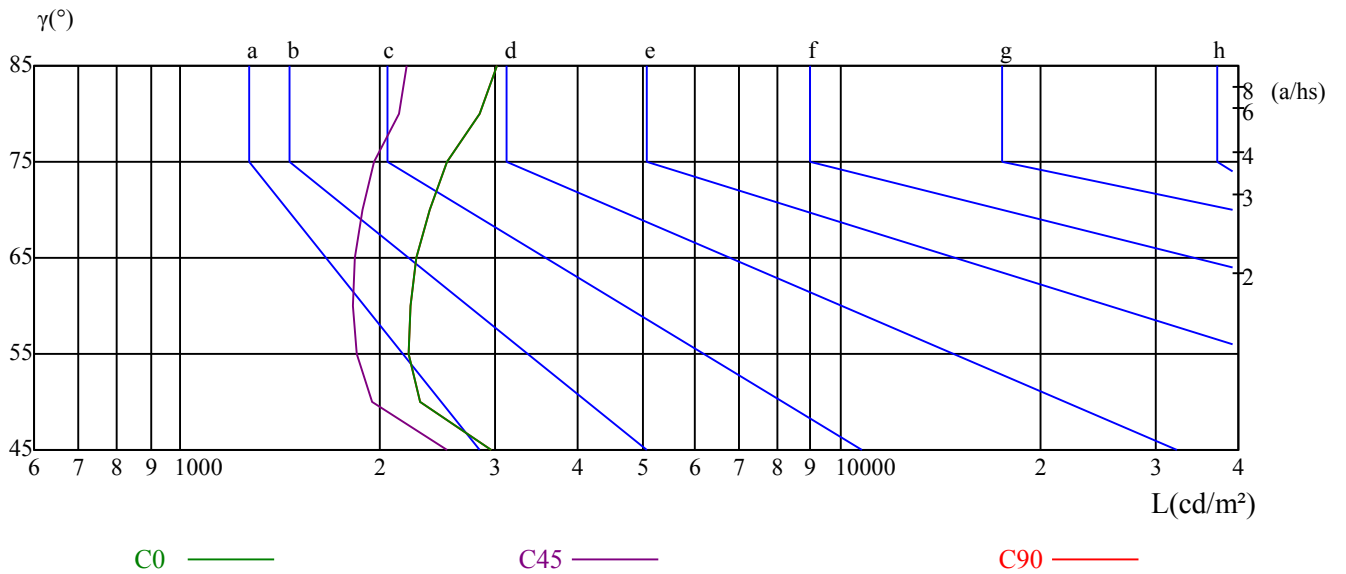
γ	45	50	55	60	65	70	75	80	85
C0	2946	2303	2221	2227	2282	2388	2537	2839	3006
C45	2533	1951	1852	1826	1838	1887	1962	2141	2202
C90	2946	2303	2221	2227	2282	2388	2537	2839	3006

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5462	5462	5462	8692	8692	8692	25339	25339	25339

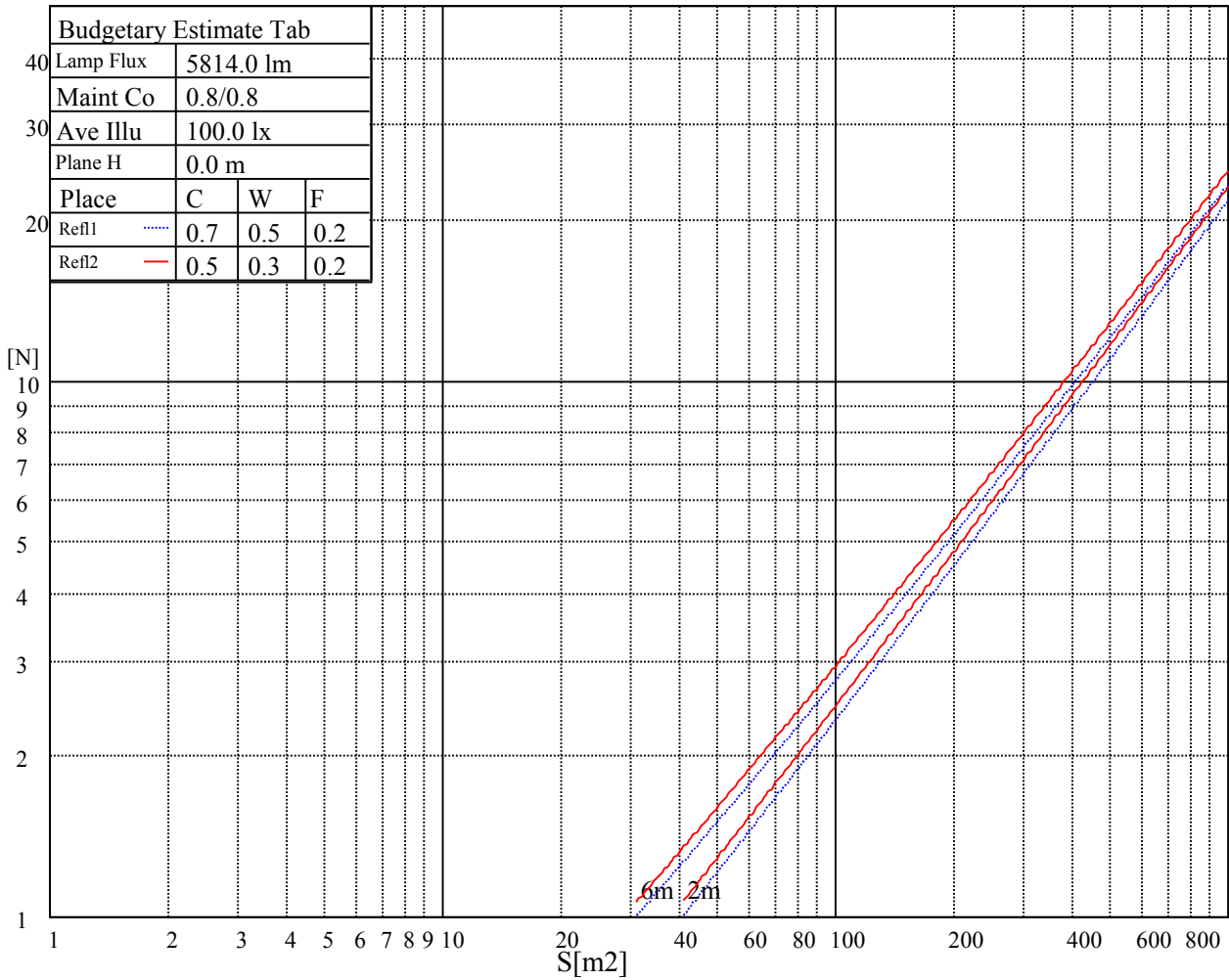
Glare Table

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

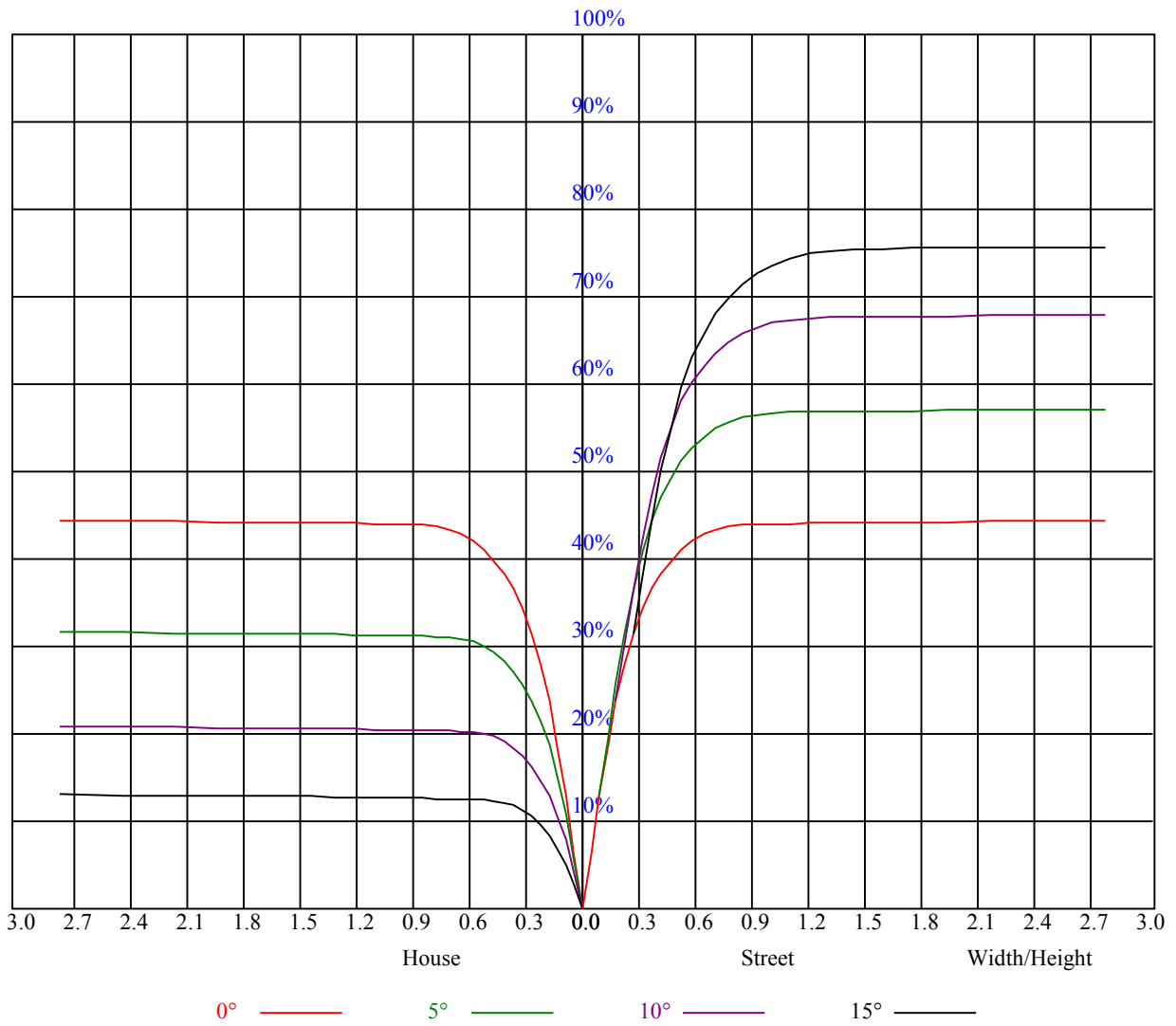
Luminance Limiting Curve



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	-1.81	-0.89	-1.44	-0.58	-0.27	-1.84	-0.93	-1.48	-0.62	-0.30
	3H	0.49	1.29	0.87	1.63	2.00	0.46	1.27	0.85	1.60	1.97
	4H	1.73	2.47	2.14	2.83	3.22	1.71	2.46	2.12	2.81	3.20
	6H	3.05	3.73	3.47	4.11	4.51	3.06	3.74	3.48	4.11	4.51
	8H	3.71	4.35	4.15	4.74	5.15	3.72	4.36	4.16	4.75	5.16
	12H	4.73	5.34	5.16	5.72	6.15	4.73	5.34	5.17	5.73	6.16
4H	2H	-1.31	-0.57	-0.90	-0.21	0.18	-1.34	-0.59	-0.93	-0.24	0.15
	3H	1.28	1.89	1.69	2.30	2.71	1.26	1.87	1.68	2.28	2.69
	4H	2.69	3.24	3.13	3.67	4.12	2.69	3.23	3.13	3.66	4.11
	6H	4.11	4.58	4.59	5.03	5.51	4.12	4.59	4.59	5.04	5.51
	8H	4.89	5.33	5.37	5.78	6.25	4.90	5.33	5.38	5.79	6.26
	12H	5.90	6.27	6.39	6.76	7.24	5.91	6.28	6.40	6.77	7.25
8H	4H	3.16	3.60	3.64	4.05	4.52	3.15	3.59	3.63	4.04	4.52
	6H	4.84	5.19	5.35	5.69	6.18	4.85	5.19	5.36	5.70	6.18
	8H	5.77	6.07	6.30	6.60	7.09	5.78	6.08	6.31	6.61	7.10
	12H	6.89	7.15	7.42	7.65	8.23	6.90	7.16	7.42	7.66	8.24
12H	4H	3.27	3.64	3.76	4.13	4.61	3.26	3.63	3.75	4.12	4.60
	6H	5.23	5.34	5.57	5.81	6.36	5.24	5.34	5.58	5.82	6.37
	8H	6.05	6.31	6.58	6.81	7.39	6.06	6.32	6.58	6.82	7.40
Variation with the observer position at spacings:											
S = 1.0H		5.7/-7.3					5.7/-7.3				
S = 1.5H		7.9/-5.7					7.9/-5.7				
S = 2.0H		9.5/-4.4					9.5/-4.4				
Standard tables:		BK2					BK2				
Uncorrected UGR		-2.6					-2.6				



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	1.08	1.08	1.08	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	0.99	0.97	0.95	0.97	0.95	0.93	0.94	0.92	0.90	0.90	0.89	0.88	0.87	0.86	0.85	0.83
2	0.94	0.91	0.88	0.93	0.90	0.87	0.90	0.87	0.85	0.87	0.85	0.83	0.85	0.83	0.82	0.80
3	0.90	0.86	0.83	0.89	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.82	0.80	0.78	0.77
4	0.86	0.82	0.79	0.85	0.81	0.78	0.83	0.80	0.77	0.81	0.79	0.76	0.80	0.77	0.75	0.74
5	0.82	0.78	0.75	0.82	0.78	0.75	0.80	0.77	0.74	0.79	0.76	0.73	0.77	0.75	0.73	0.72
6	0.79	0.75	0.72	0.79	0.75	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.73	0.70	0.69
7	0.77	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.69	0.73	0.70	0.68	0.67
8	0.74	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.65
9	0.72	0.68	0.65	0.71	0.67	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.63
10	0.70	0.66	0.63	0.69	0.65	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.67	0.65	0.62	0.62



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	16830.74	15828.72	12382.18	7691.38	3661.25	2361.37	1861.46	967.89	322.08
45.0	16847.26	15949.84	12228.03	7658.35	3760.35	2376.78	1879.07	1008.63	278.03
90.0	16852.76	15707.59	10851.07	6769.18	3362.29	2247.95	1766.76	827.61	79.34
135.0	16797.71	16291.19	12415.22	7900.59	3881.48	2369.08	1871.37	1061.49	278.59
180.0	16830.74	15525.90	10785.55	6993.26	3426.16	2268.87	1779.42	835.10	113.42
225.0	16847.26	15553.43	10901.72	6812.68	3509.85	2293.65	1756.30	831.30	92.49
270.0	16852.76	15713.10	12327.13	7696.88	3809.90	2574.99	1888.43	973.95	295.10
315.0	16797.71	15267.14	10794.36	6266.52	3360.09	2211.07	1718.86	808.89	73.83
360.0	16830.74	15828.72	12382.18	7691.38	3661.25	2361.37	1861.46	967.89	322.08

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	35.40	26.37	24.61	23.73	23.12	22.74	22.52	22.63	22.41
45.0	35.24	25.88	24.22	23.34	22.79	22.35	22.02	21.86	21.75
90.0	36.39	26.04	24.39	23.56	22.90	22.52	22.30	22.02	21.97
135.0	37.16	26.92	25.05	24.06	23.51	23.23	22.57	24.00	21.69
180.0	31.77	25.82	24.28	23.51	22.90	22.52	22.30	22.13	21.80
225.0	30.50	25.71	24.11	23.23	22.68	22.30	22.02	21.91	21.86
270.0	34.74	26.76	24.94	23.84	23.18	22.74	22.41	22.19	22.35
315.0	33.75	26.70	24.94	24.06	23.56	23.62	23.84	28.08	22.85
360.0	35.40	26.37	24.61	23.73	23.12	22.74	22.52	22.63	22.41

C/γ(°)	90.0
0.0	21.42
45.0	21.47
90.0	21.47
135.0	21.47
180.0	21.42
225.0	21.42
270.0	21.47
315.0	21.47
360.0	21.42