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Nata

LumCAT: 4-2221-A	
Luminaire: BJB47.319.2030	
Report No: NT2017092012	Voltage(V): 52.7000
Test No: GC2017092012	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): 5173.95
Efficiency(%): 88.99%
Lumens(lm)/Power(W): 122.72
Central intensity(cd): 10943.840
Maximum intensity(cd): 10943.840
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=38.9
 [C90/270]Total=38.9
Field angle(10%Imax): [C0/180]Total=68.3
 [C90/270]Total=68.3
Maximum s/h(1/2): C0_180=0.64 C90_270=0.64
Maximum s/h(1/4): C0_180=0.62 C90_270=0.62
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.03%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.600%

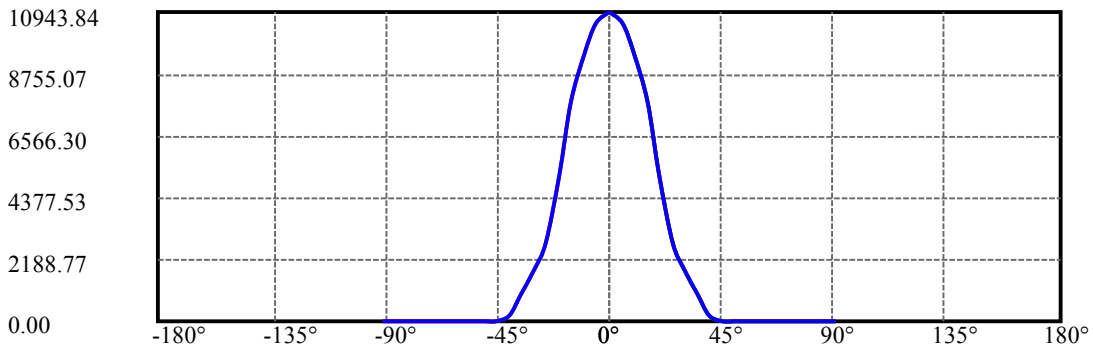
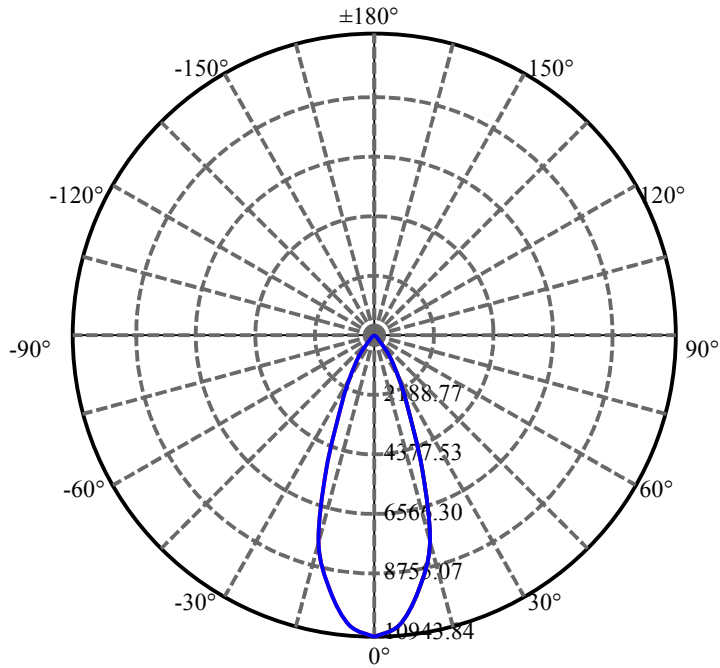
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	10943.836	65.446	65.446	1.126%	1.265%
5.0	10563.534	504.655	570.101	8.680%	11.019%
10.0	9425.656	897.163	1467.264	15.431%	28.359%
15.0	7764.535	1101.542	2568.806	18.946%	49.649%
20.0	5192.369	973.434	3542.241	16.743%	68.463%
25.0	2778.628	643.677	4185.918	11.071%	80.904%
30.0	1857.465	509.073	4694.991	8.756%	90.743%
35.0	941.464	295.995	4990.986	5.091%	96.464%
40.0	205.106	72.266	5063.252	1.243%	97.860%
45.0	32.442	12.574	5075.826	.216%	98.104%
50.0	25.766	10.819	5086.646	.186%	98.313%
55.0	24.424	10.967	5097.612	.189%	98.525%
60.0	23.626	11.215	5108.828	.193%	98.741%
65.0	23.055	11.453	5120.281	.197%	98.963%
70.0	22.725	11.705	5131.986	.201%	99.189%
75.0	22.435	11.879	5143.865	.204%	99.419%
80.0	22.305	12.040	5155.905	.207%	99.651%
85.0	22.119	12.078	5167.983	.208%	99.885%
90.0	21.768	5.966	5173.949	.103%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	4694.99	80.75%	90.74%
0-40	5063.25	87.09%	97.86%
0-60	5108.83	87.87%	98.74%
0-90	5167.98	88.89%	99.88%
0-120	5167.98	88.89%	99.88%
0-180	5173.95	88.99%	100.00%
60-90	70.37	1.21%	1.36%
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%
0-24.64	4139.16	71.19%	80.00%

ZONAL LUMEN SUMMARY

0-10	1467.26
10-20	2074.98
20-30	1152.75
30-40	368.26
40-50	23.39
50-60	22.18
60-70	23.16
70-80	23.92
80-90	12.08
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



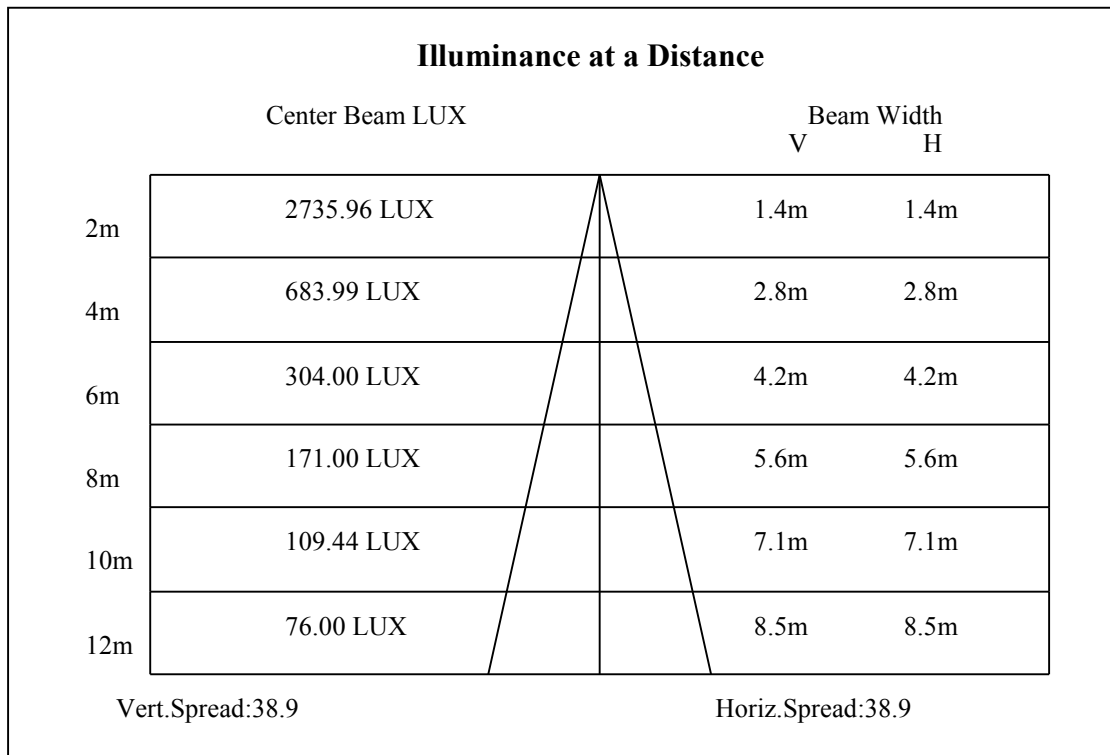
C0(Max): ———

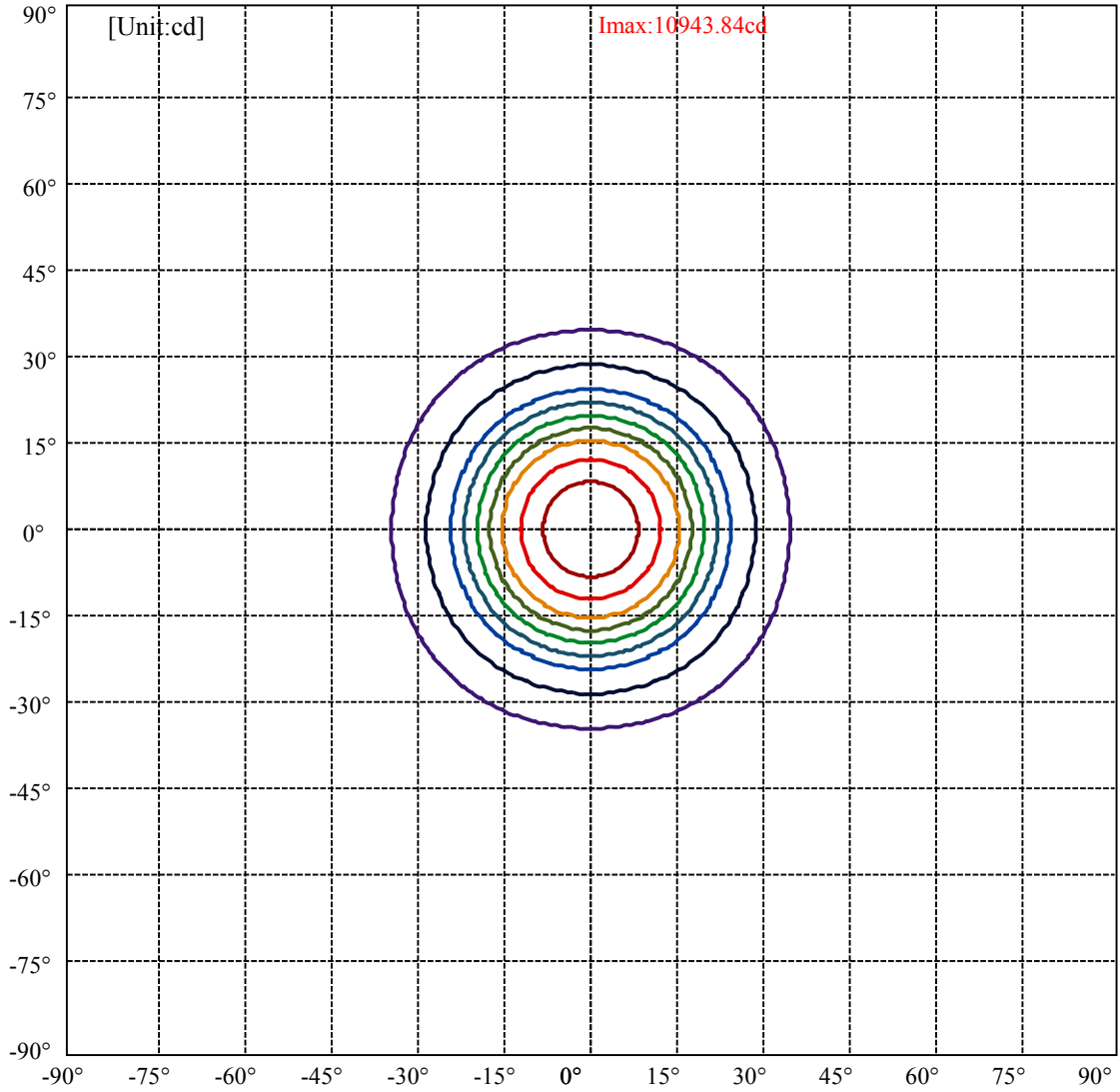
C0/C180: ———

C90/C270: ———

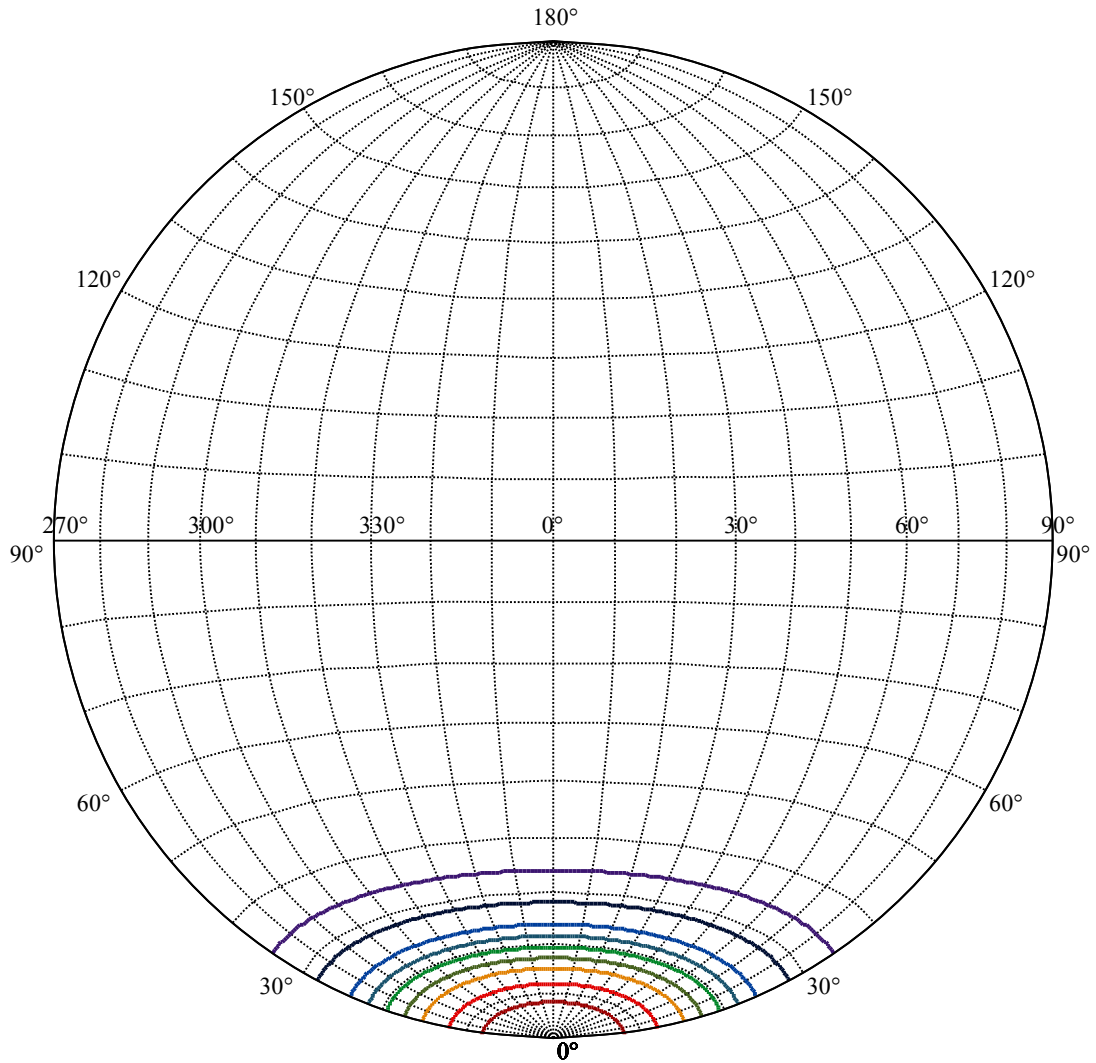
Field angle(10%Imax):C0/180Left:34.2 Right:34.2
:C90/270Left:34.2 Right:34.2

Beam Angle(50%Imax):C0/180Left:19.5 Right:19.5
:C90/270Left:19.5 Right:19.5





(10%Imax) 1094.38	—
(20%Imax) 2188.77	—
(30%Imax) 3283.15	—
(40%Imax) 4377.53	—
(50%Imax) 5471.92	—
(60%Imax) 6566.3	—
(70%Imax) 7660.69	—
(80%Imax) 8755.07	—
(90%Imax) 9849.45	—



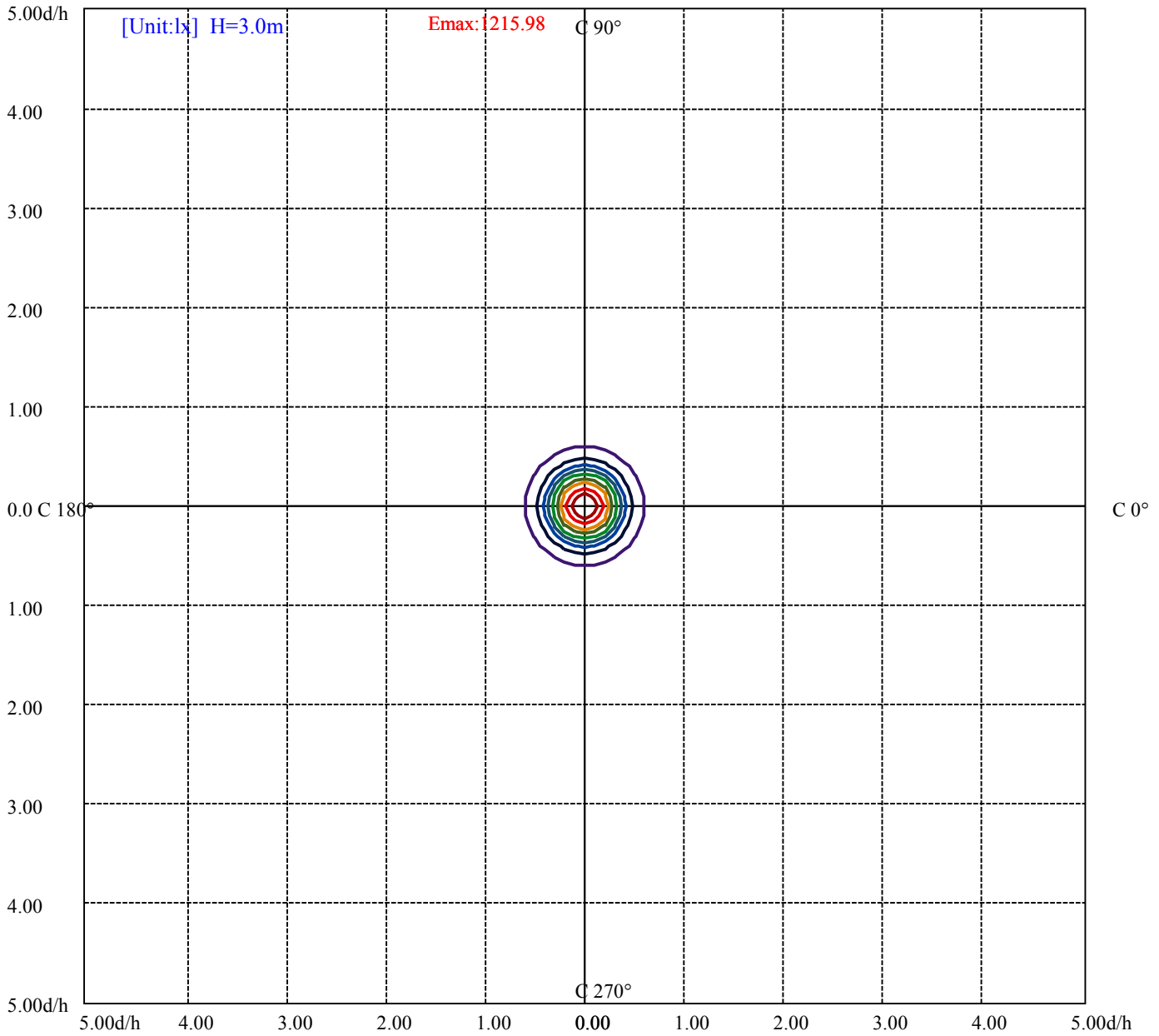
House

[Unit:cd]

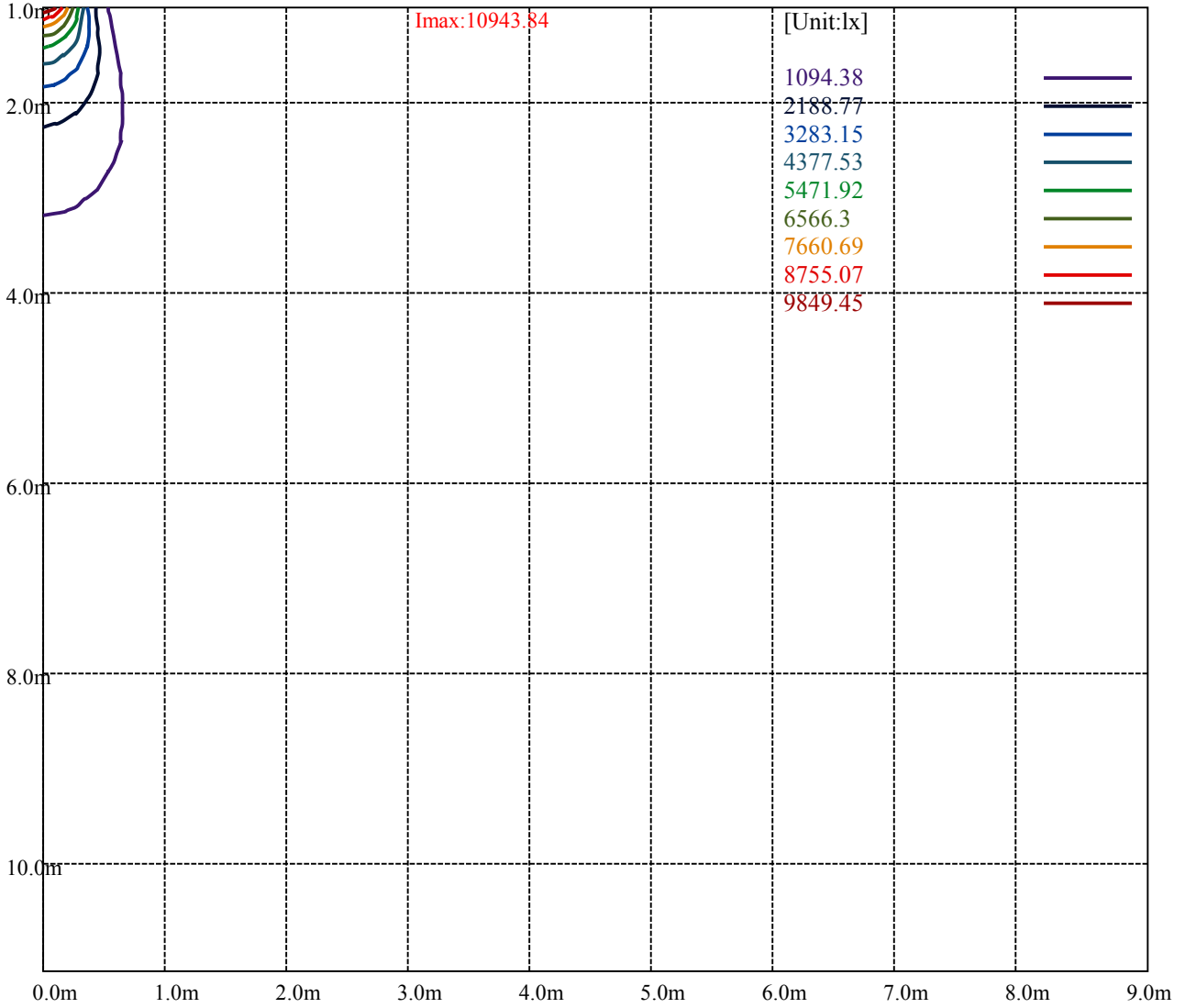
Road

Imax:10943.84

(10%Imax) 1094.38	—
(20%Imax) 2188.77	—
(30%Imax) 3283.15	—
(40%Imax) 4377.53	—
(50%Imax) 5471.92	—
(60%Imax) 6566.3	—
(70%Imax) 7660.69	—
(80%Imax) 8755.07	—
(90%Imax) 9849.45	—



(10%E _{max}) 121.5978	—
(20%E _{max}) 243.1956	—
(30%E _{max}) 364.7944	—
(40%E _{max}) 486.3922	—
(50%E _{max}) 607.99	—
(60%E _{max}) 729.5878	—
(70%E _{max}) 851.1867	—
(80%E _{max}) 972.7844	—
(90%E _{max}) 1094.382	—



Luminance Table

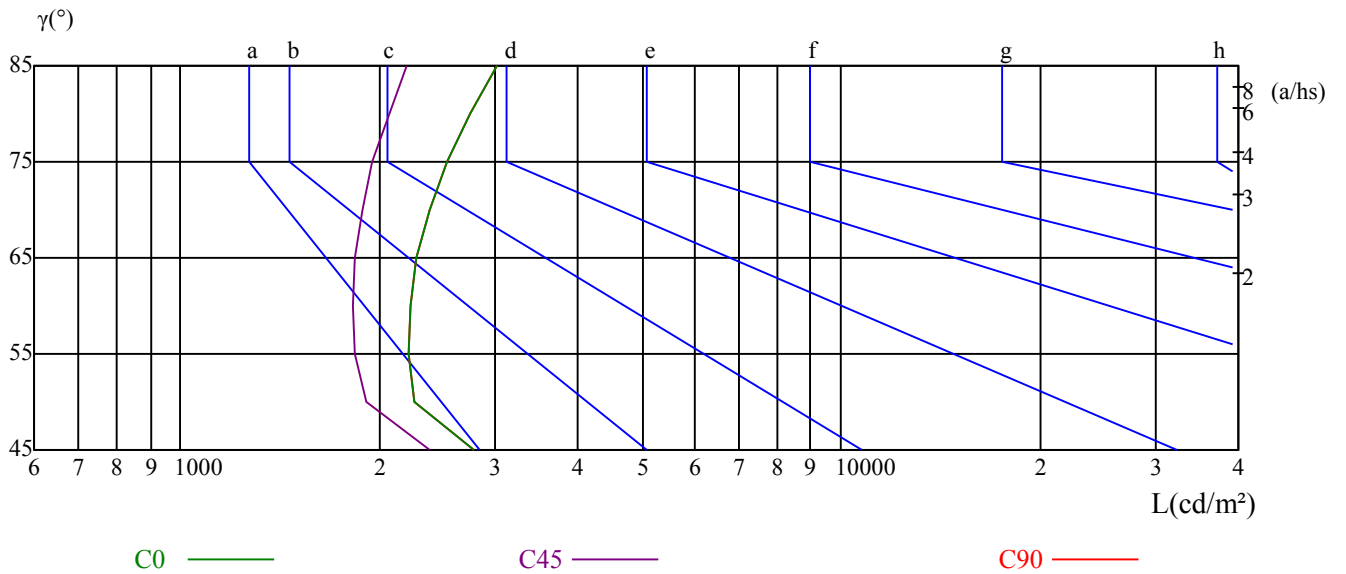
γ	45	50	55	60	65	70	75	80	85
C0	2781	2259	2208	2223	2279	2385	2530	2741	3011
C45	2391	1913	1841	1823	1836	1885	1956	2067	2206
C90	2781	2259	2208	2223	2279	2385	2530	2741	3011

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5455	5455	5455	8668	8668	8668	25379	25379	25379

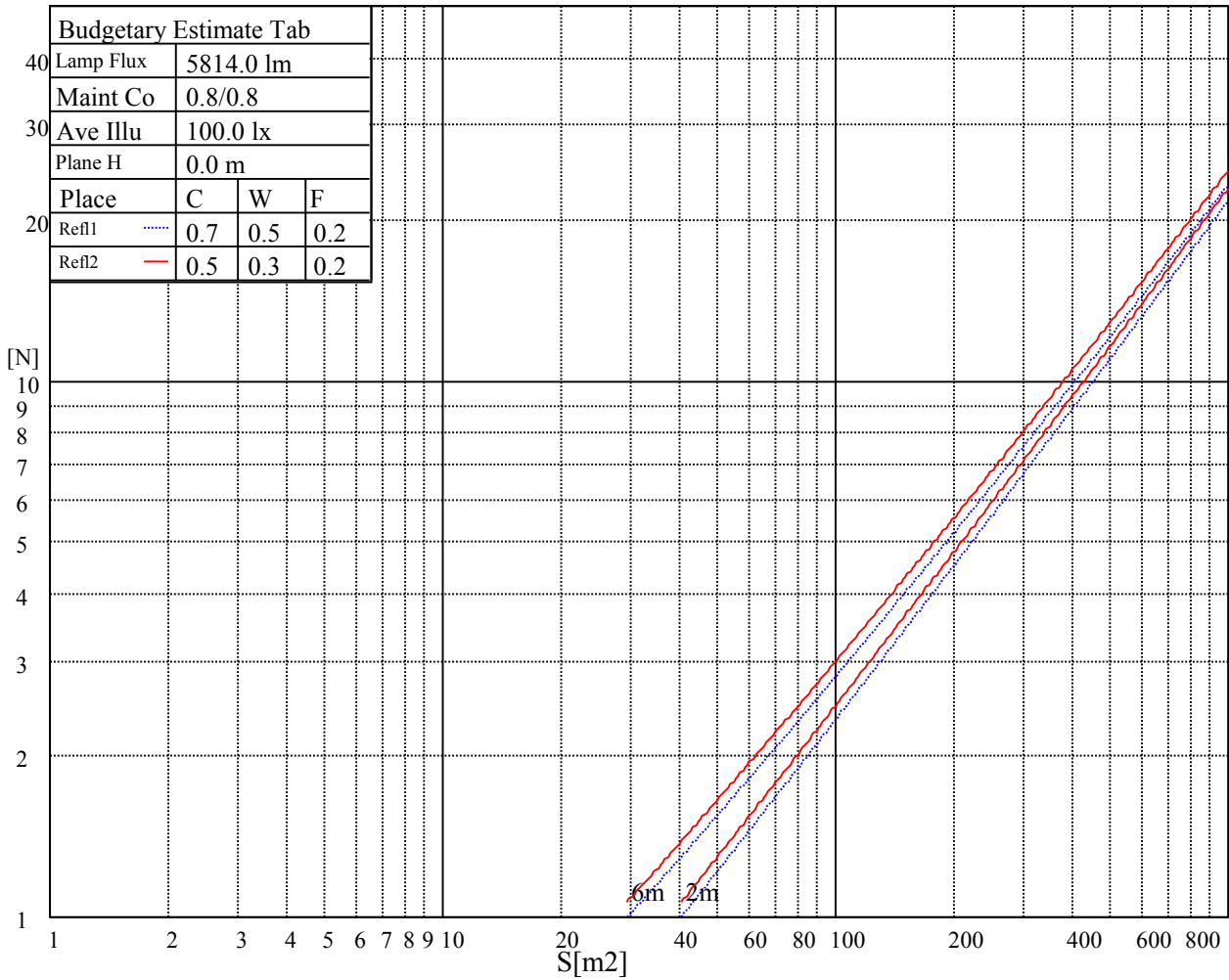
Glare Table

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

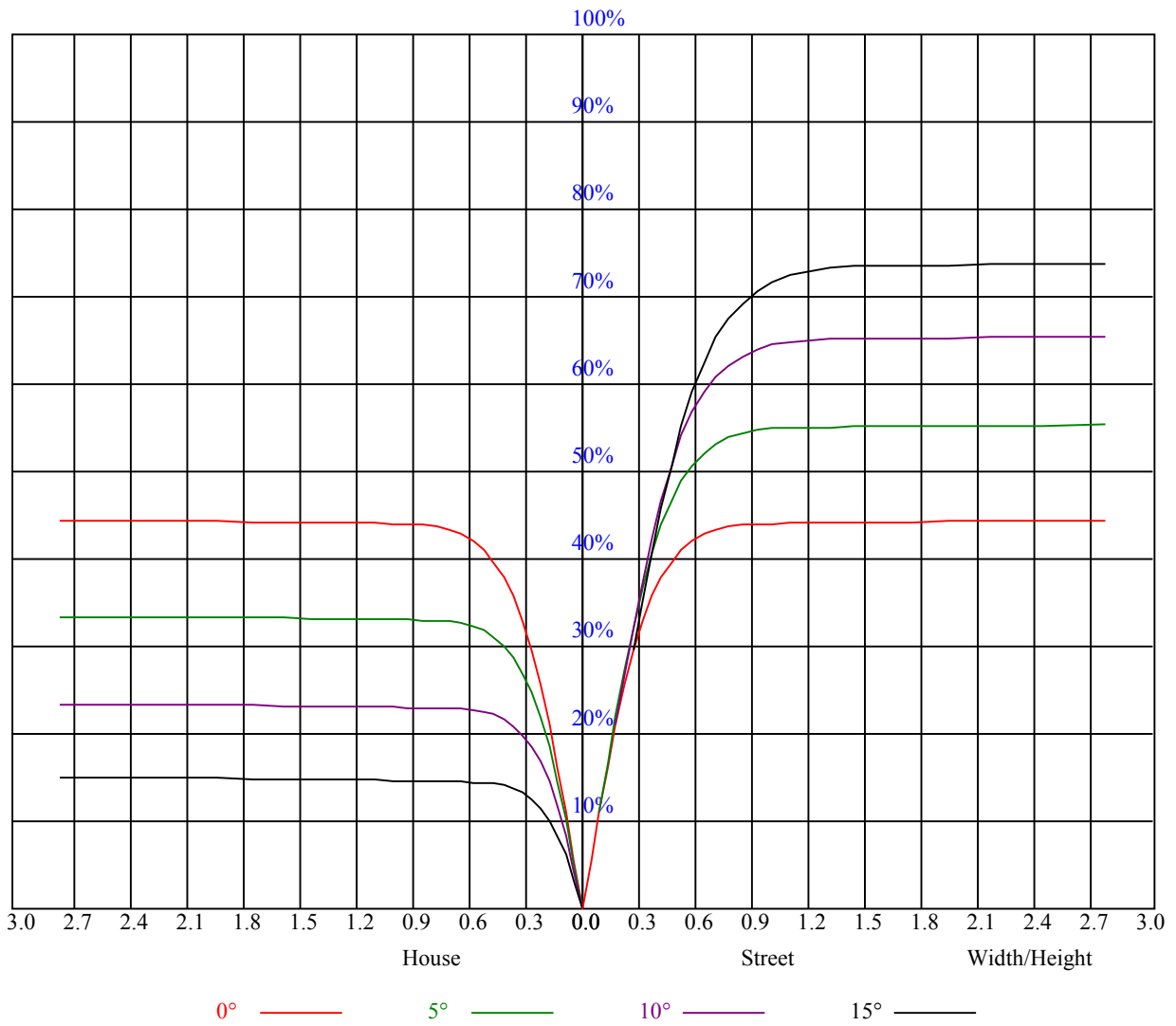
Luminance Limiting Curve



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	-1.86	-0.95	-1.49	-0.63	-0.32	-1.83	-0.92	-1.46	-0.61	-0.29
	3H	0.43	1.24	0.82	1.57	1.94	0.49	1.30	0.87	1.63	2.00
	4H	1.68	2.43	2.09	2.78	3.17	1.75	2.49	2.16	2.85	3.24
	6H	2.98	3.66	3.40	4.04	4.44	3.09	3.77	3.51	4.15	4.55
	8H	3.63	4.27	4.07	4.66	5.07	3.76	4.40	4.20	4.79	5.20
	12H	4.64	5.25	5.08	5.64	6.07	4.78	5.39	5.22	5.77	6.21
4H	2H	-1.37	-0.62	-0.96	-0.27	0.13	-1.34	-0.60	-0.93	-0.24	0.15
	3H	1.23	1.84	1.64	2.25	2.66	1.27	1.89	1.69	2.30	2.70
	4H	2.65	3.19	3.09	3.62	4.07	2.70	3.25	3.14	3.68	4.13
	6H	4.04	4.51	4.52	4.96	5.44	4.13	4.60	4.61	5.05	5.53
	8H	4.80	5.24	5.28	5.69	6.17	4.92	5.35	5.40	5.80	6.28
	12H	5.81	6.19	6.30	6.68	7.15	5.94	6.31	6.43	6.80	7.28
8H	4H	3.09	3.52	3.57	3.98	4.45	3.14	3.57	3.62	4.03	4.50
	6H	4.73	5.07	5.24	5.57	6.06	4.81	5.15	5.32	5.66	6.14
	8H	5.64	5.94	6.17	6.47	6.96	5.75	6.05	6.28	6.57	7.07
	12H	6.78	7.04	7.30	7.54	8.12	6.89	7.15	7.42	7.65	8.23
12H	4H	3.18	3.56	3.68	4.05	4.53	3.23	3.60	3.72	4.09	4.57
	6H	5.10	5.21	5.44	5.68	6.23	5.18	5.28	5.52	5.75	6.30
	8H	5.91	6.17	6.43	6.67	7.25	6.01	6.27	6.53	6.77	7.35
Variation with the observer position at spacings:											
S = 1.0H		5.7/-7.5					5.7/-7.5				
S = 1.5H		8.0/-5.9					8.0/-5.9				
S = 2.0H		9.6/-4.6					9.6/-4.6				
Standard tables:		BK2					BK2				
Uncorrected UGR		-2.4					-2.4				



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	1.07	1.07	1.07	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	0.94	0.94	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.84
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	0.89	0.85	0.82	0.88	0.85	0.82	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.77
4	0.85	0.81	0.78	0.84	0.80	0.77	0.82	0.79	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.74
5	0.82	0.77	0.74	0.81	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.71
6	0.78	0.74	0.71	0.78	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.68
7	0.75	0.71	0.68	0.75	0.70	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.66
8	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.63
9	0.70	0.66	0.63	0.69	0.65	0.63	0.69	0.65	0.62	0.68	0.65	0.62	0.67	0.64	0.62	0.61
10	0.67	0.63	0.60	0.67	0.63	0.60	0.66	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.59



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	10939.16	10777.29	9812.70	8319.02	5937.28	3191.07	2022.22	1166.09	324.28
45.0	10940.81	10650.66	9591.38	8011.26	5468.75	2888.26	1929.18	1003.68	288.50
90.0	10914.38	10290.59	9037.51	7193.12	4591.15	2402.11	1654.44	719.70	56.27
135.0	10981.00	10466.22	9188.91	7498.68	4855.97	2818.89	1792.64	808.23	296.75
180.0	10939.16	10353.91	9040.26	7245.42	4487.10	2372.93	1685.83	715.95	50.98
225.0	10940.81	10493.20	9250.58	7579.61	4872.49	2532.59	1818.51	850.62	88.70
270.0	10914.38	10760.77	9803.89	8241.94	5966.46	3107.38	2010.66	1220.05	307.77
315.0	10981.00	10715.63	9680.02	8027.22	5359.74	2915.79	1946.24	1047.39	227.60
360.0	10939.16	10777.29	9812.70	8319.02	5937.28	3191.07	2022.22	1166.09	324.28

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	37.38	26.26	24.78	23.84	23.18	22.79	22.52	22.41	22.19
45.0	33.64	25.88	24.50	23.62	22.96	22.52	22.13	21.91	21.75
90.0	29.73	25.38	24.17	23.45	22.90	22.57	22.30	22.02	22.19
135.0	30.28	25.44	24.28	23.73	23.34	23.40	23.07	23.29	22.68
180.0	28.74	25.38	24.28	23.73	23.29	23.07	22.96	22.96	22.68
225.0	30.28	25.60	24.22	23.34	22.74	22.35	22.02	21.86	21.75
270.0	35.46	26.37	24.72	23.73	23.07	22.52	22.19	21.91	21.75
315.0	34.02	25.82	24.45	23.56	22.96	22.57	22.30	22.08	21.97
360.0	37.38	26.26	24.78	23.84	23.18	22.79	22.52	22.41	22.19

C/γ(°)	90.0
0.0	22.02
45.0	21.58
90.0	21.64
135.0	21.86
180.0	21.97
225.0	21.58
270.0	21.69
315.0	21.80
360.0	22.02