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Nata

LumCAT: 4-2220-A
Luminaire: BJB47.319.2030
Report No: NT2017092006
Test No: GC2017092006
LampCAT: LUMILEDS 1216
Lamp flux(lm): 4061.0
Number of Lamps: 1
Length(mm): 100
Phm Type: C
Voltage(V): 34.1000
Current(A): 0.8000
Power (W): 27.2800
PF: 0.0000
Ballast type: DC
Width(mm): 100
Height(mm): 0

Photometric Results

Lumens(lm): 3642.58
Efficiency(%): 89.70%
Lumens(lm)/Power(W): 133.53
Central intensity(cd): 11517.800
Maximum intensity(cd): 11517.800
Angle of maximum intensity: $C=0.0$ $\gamma=0.0$
Beam Angle(50%Imax): [C0/180]Total=27.8
[C90/270]Total=27.8
Field angle(10%Imax): [C0/180]Total=60.6
[C90/270]Total=60.6
Maximum s/h(1/2): C0_180=0.47 C90_270=0.47
Maximum s/h(1/4): C0_180=0.48 C90_270=0.48
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.31%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.003%

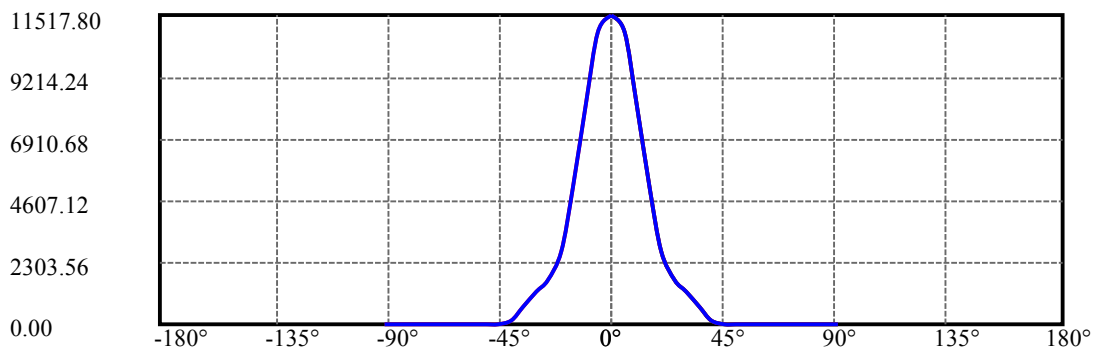
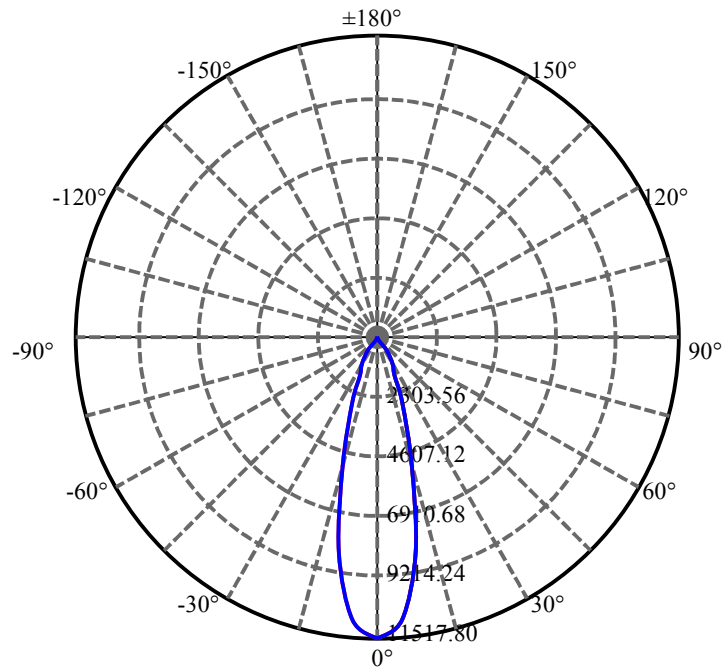
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	11517.799	68.879	68.879	1.696%	1.891%
5.0	10847.350	518.214	587.093	12.761%	16.117%
10.0	8307.598	790.743	1377.835	19.472%	37.826%
15.0	5051.975	716.716	2094.551	17.649%	57.502%
20.0	2684.894	503.348	2597.899	12.395%	71.320%
25.0	1633.661	378.442	2976.341	9.319%	81.710%
30.0	1184.009	324.500	3300.841	7.991%	90.618%
35.0	648.606	203.921	3504.761	5.021%	96.216%
40.0	169.209	59.618	3564.38	1.468%	97.853%
45.0	23.777	9.216	3573.596	.227%	98.106%
50.0	18.375	7.716	3581.311	.190%	98.318%
55.0	17.150	7.701	3589.012	.190%	98.529%
60.0	16.510	7.837	3596.849	.193%	98.745%
65.0	16.083	7.990	3604.839	.197%	98.964%
70.0	15.849	8.164	3613.003	.201%	99.188%
75.0	15.650	8.286	3621.289	.204%	99.415%
80.0	16.152	8.719	3630.008	.215%	99.655%
85.0	15.485	8.455	3638.463	.208%	99.887%
90.0	15.024	4.117	3642.581	.101%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	3300.84	81.28%	90.62%
0-40	3564.38	87.77%	97.85%
0-60	3596.85	88.57%	98.74%
0-90	3638.46	89.60%	99.89%
0-120	3638.46	89.60%	99.89%
0-180	3642.58	89.70%	100.00%
60-90	49.45	1.22%	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%
0-24.18	2914.07	71.76%	80.00%

ZONAL LUMEN SUMMARY

0-10	1377.84
10-20	1220.06
20-30	702.94
30-40	263.54
40-50	16.93
50-60	15.54
60-70	16.15
70-80	17.01
80-90	8.46
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: —————

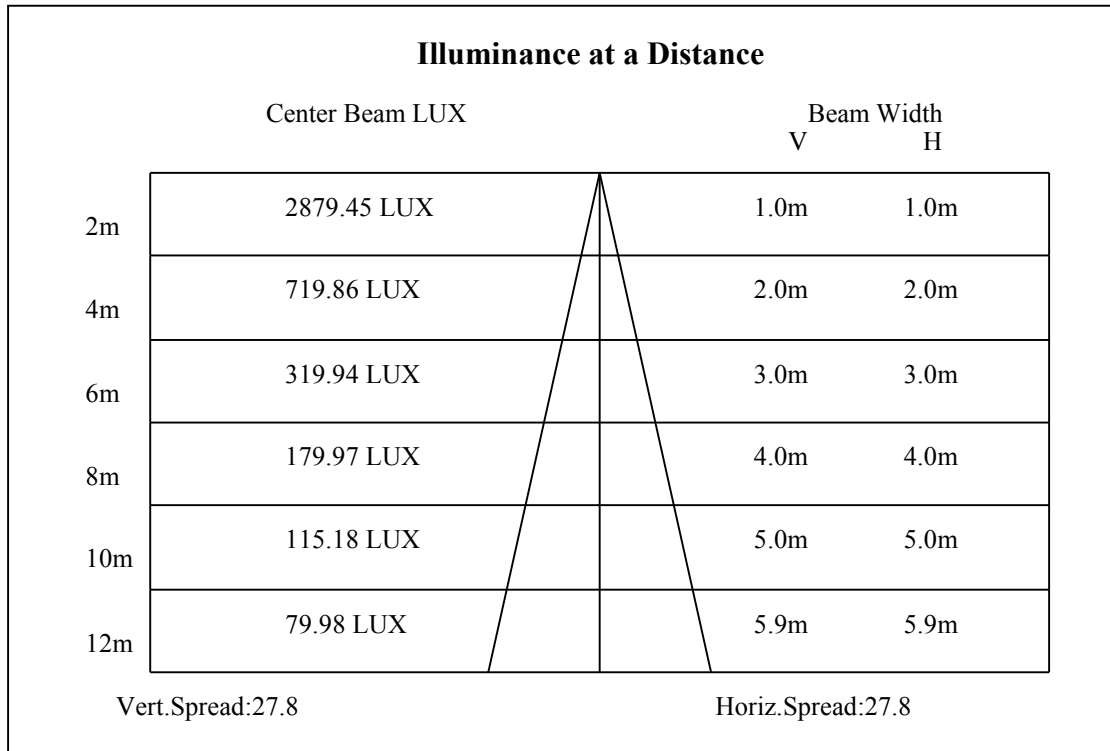
C90/C270: —————

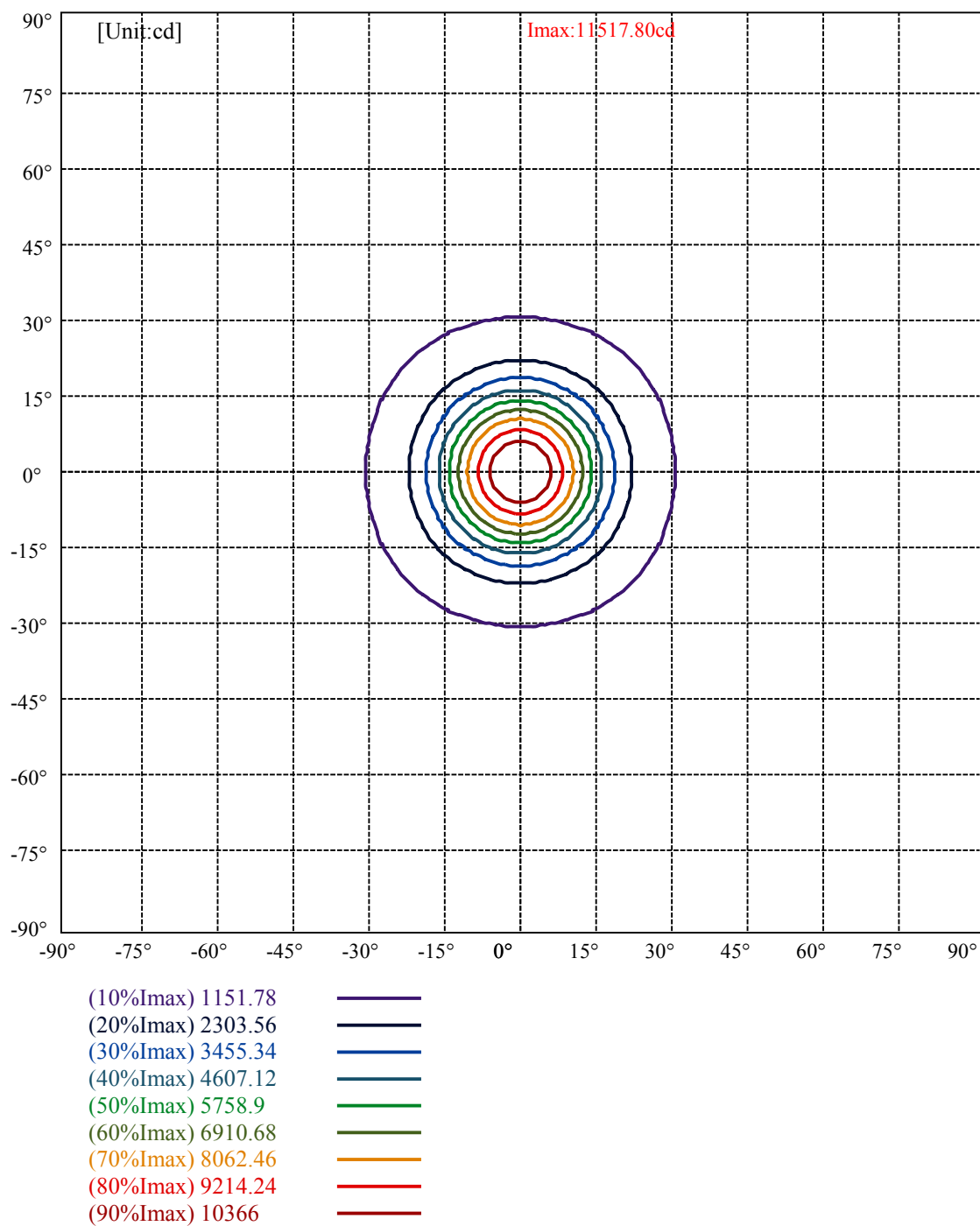
Field angle(10%Imax):C0/180Left:30.3 Right:30.3

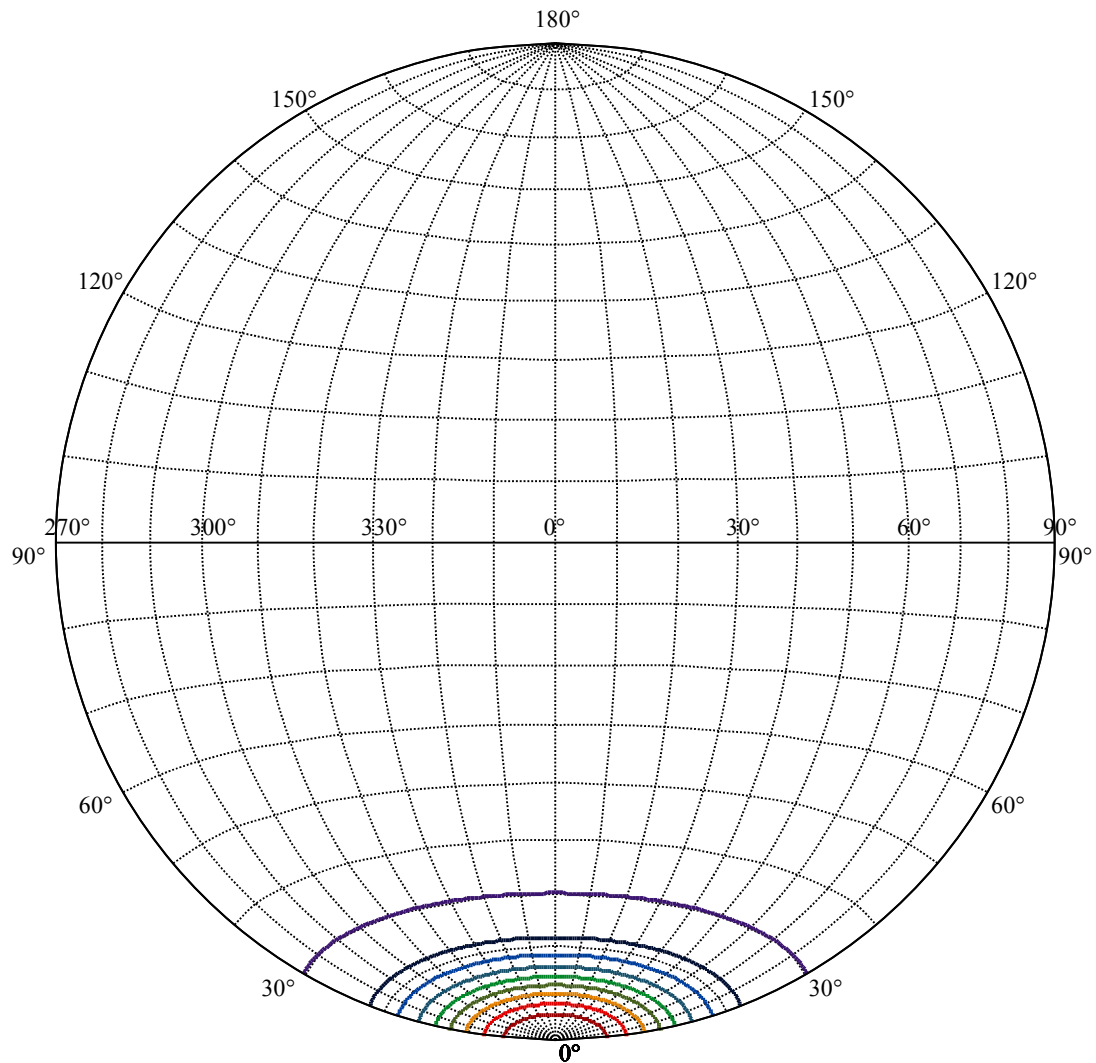
:C90/270Left:30.3 Right:30.3

Beam Angle(50%Imax):C0/180Left:13.9 Right:13.9

:C90/270Left:13.9 Right:13.9







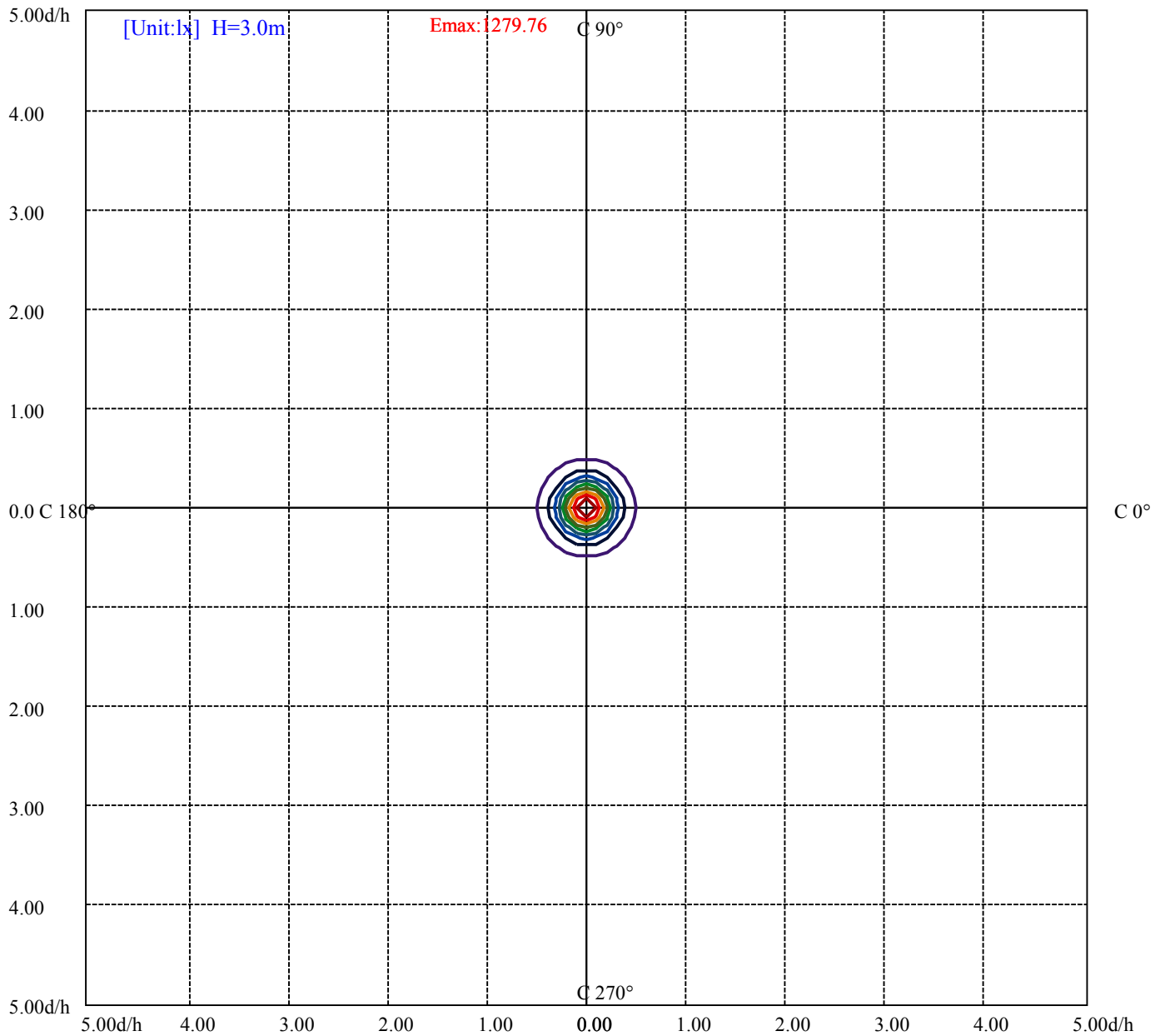
House

[Unit:cd]

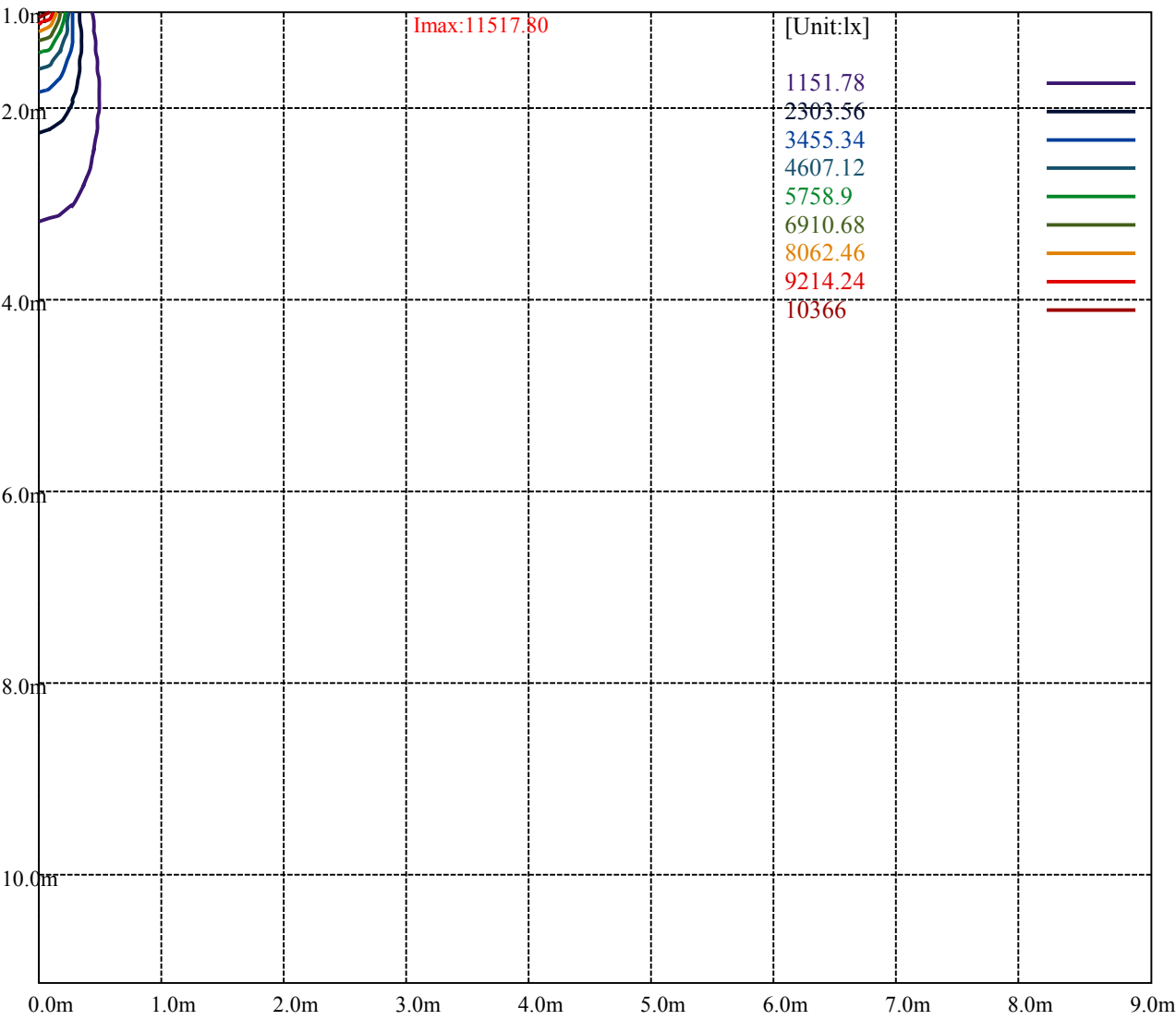
Road

Imax:11517.80

(10%Imax)	1151.78	—
(20%Imax)	2303.56	—
(30%Imax)	3455.34	—
(40%Imax)	4607.12	—
(50%Imax)	5758.9	—
(60%Imax)	6910.68	—
(70%Imax)	8062.46	—
(80%Imax)	9214.24	—
(90%Imax)	10366	—



(10%Emax)	127.9756	—
(20%Emax)	255.9511	—
(30%Emax)	383.9256	—
(40%Emax)	511.9011	—
(50%Emax)	639.8767	—
(60%Emax)	767.8522	—
(70%Emax)	895.8267	—
(80%Emax)	1023.802	—
(90%Emax)	1151.778	—



Luminance Table

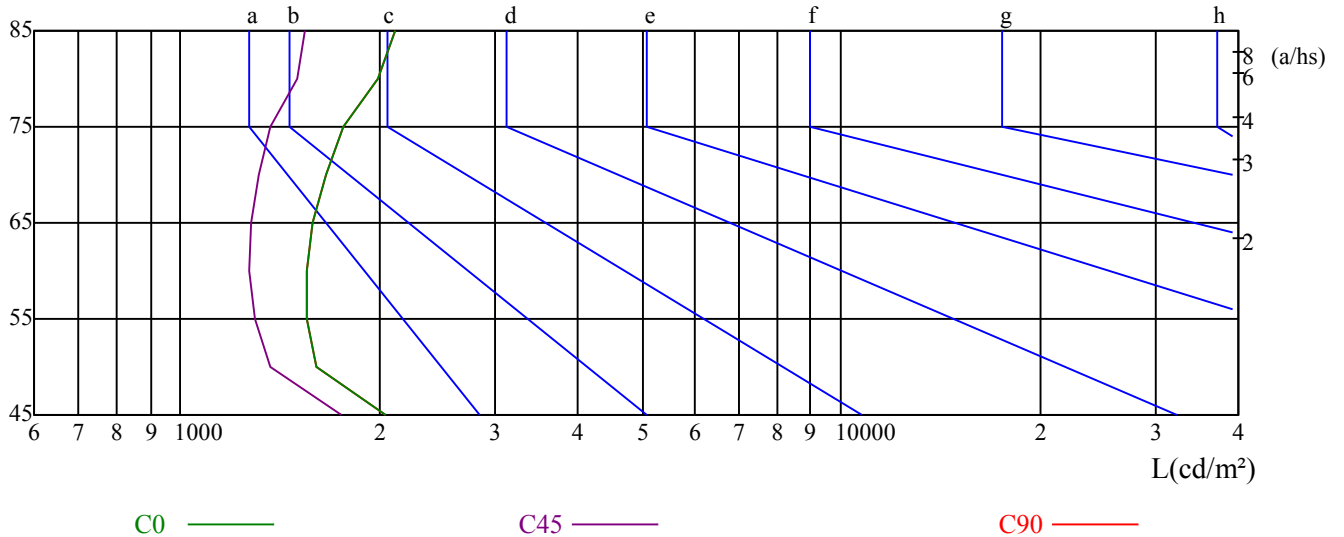
γ	45	50	55	60	65	70	75	80	85
C0	2038	1611	1551	1553	1590	1663	1765	1985	2108
C45	1752	1364	1293	1274	1281	1314	1365	1497	1544
C90	2038	1611	1551	1553	1590	1663	1765	1985	2108

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3806	3806	3806	6047	6047	6047	17767	17767	17767

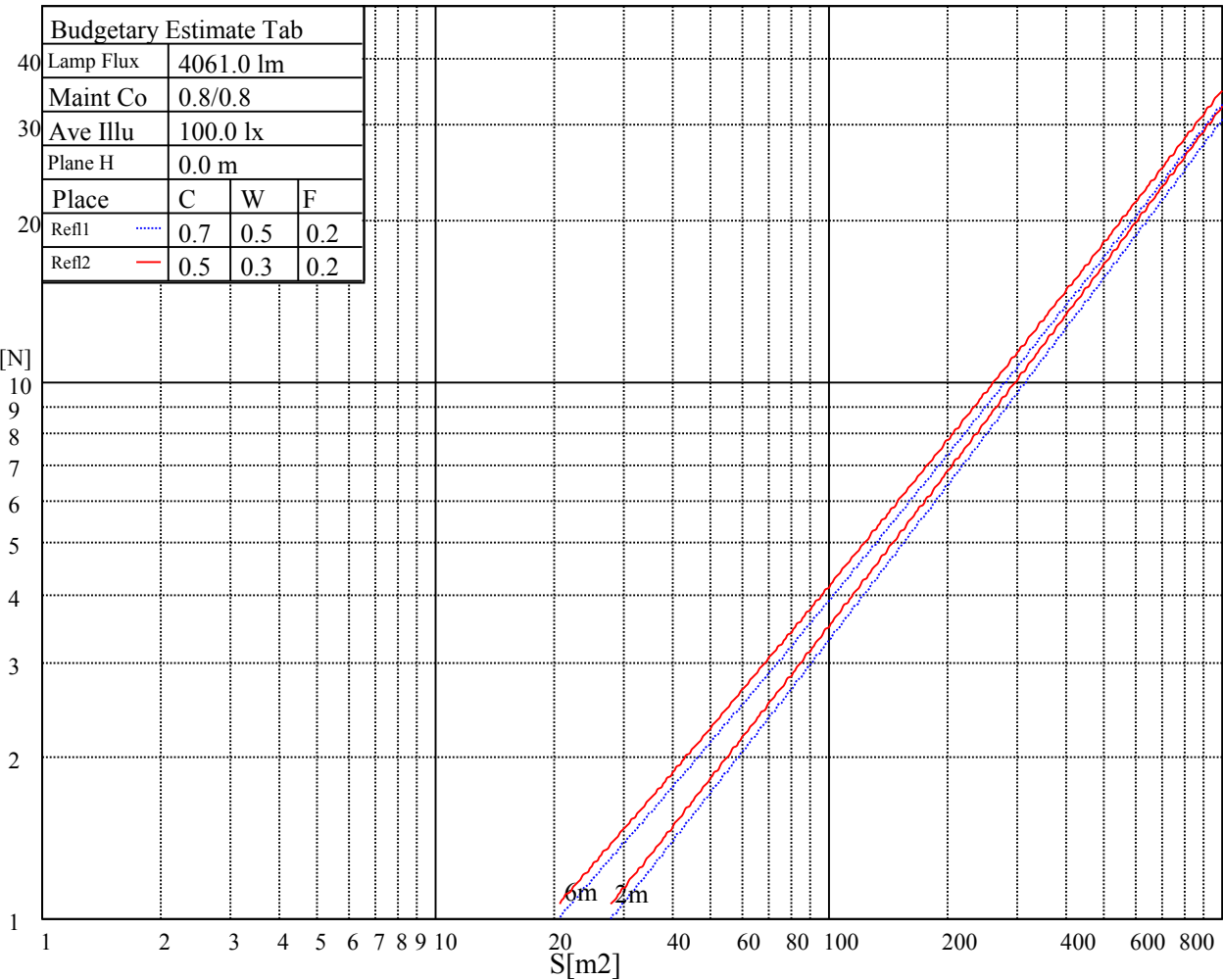
Glare Table

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

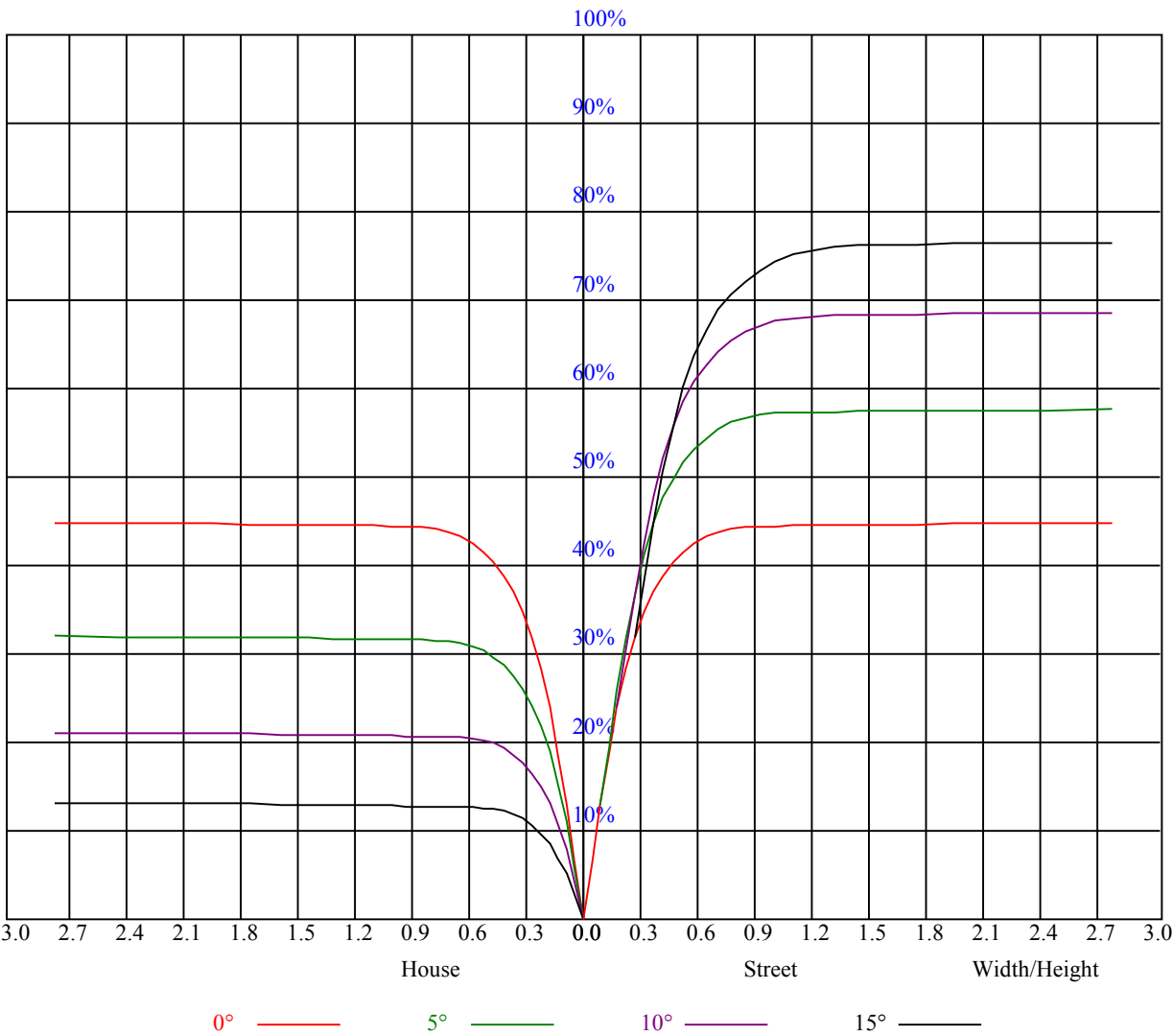
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

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	-0.90	-1.45	-0.59	-0.27	-1.96	-1.05	-1.60	-0.74	-0.42
	3H	0.49	1.30	0.88	1.63	2.00	0.31	1.12	0.69	1.45	1.82
	4H	1.76	2.50	2.17	2.86	3.25	1.54	2.28	1.94	2.63	3.03
	6H	3.21	3.89	3.63	4.26	4.66	2.84	3.53	3.26	3.90	4.30
	8H	3.91	4.54	4.34	4.94	5.35	3.50	4.14	3.94	4.53	4.94
	12H	4.91	5.52	5.35	5.91	6.34	4.51	5.12	4.94	5.50	5.93
4H	2H	-1.34	-0.59	-0.93	-0.24	0.15	-1.46	-0.71	-1.05	-0.36	0.04
	3H	1.27	1.88	1.68	2.29	2.70	1.11	1.72	1.53	2.13	2.54
	4H	2.71	3.26	3.15	3.68	4.13	2.51	3.06	2.95	3.48	3.93
	6H	4.22	4.68	4.69	5.14	5.61	3.92	4.38	4.39	4.84	5.31
	8H	5.04	5.47	5.52	5.92	6.40	4.69	5.12	5.17	5.57	6.05
	12H	6.05	6.42	6.54	6.91	7.39	5.69	6.06	6.18	6.55	7.03
8H	4H	3.15	3.58	3.63	4.04	4.51	2.98	3.42	3.46	3.87	4.35
	6H	4.91	5.25	5.42	5.76	6.24	4.64	4.99	5.16	5.49	5.98
	8H	5.88	6.18	6.41	6.70	7.20	5.57	5.87	6.10	6.39	6.89
	12H	7.00	7.26	7.53	7.76	8.34	6.69	6.95	7.22	7.45	8.03
12H	4H	3.24	3.61	3.73	4.10	4.58	3.10	3.47	3.59	3.96	4.44
	6H	5.28	5.38	5.62	5.86	6.41	5.04	5.14	5.38	5.62	6.17
	8H	6.14	6.40	6.66	6.90	7.48	5.86	6.12	6.38	6.61	7.20
Variation with the observer position at spacings:											
S = 1.0H		5.5/-7.3					5.5/-7.3				
S = 1.5H		7.7/-5.6					7.7/-5.6				
S = 2.0H		9.3/-4.4					9.3/-4.4				
Standard tables:		BK2					BK2				
Uncorrected UGR		-3.9					-3.9				



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	1.09	1.09	1.09	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.00	0.98	0.96	0.98	0.96	0.94	0.95	0.93	0.91	0.91	0.90	0.89	0.88	0.87	0.86	0.84
2	0.95	0.92	0.89	0.94	0.91	0.88	0.91	0.88	0.86	0.88	0.86	0.84	0.86	0.84	0.82	0.81
3	0.91	0.87	0.84	0.90	0.86	0.83	0.87	0.84	0.82	0.85	0.83	0.80	0.83	0.81	0.79	0.78
4	0.87	0.83	0.79	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.79	0.77	0.81	0.78	0.76	0.75
5	0.83	0.79	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.74	0.78	0.76	0.74	0.73
6	0.80	0.76	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.70
7	0.77	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
8	0.75	0.71	0.68	0.74	0.70	0.68	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.67	0.66
9	0.73	0.68	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.64
10	0.70	0.66	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.62



Intensity data(cd)										Appendix Page: 15 Total:15
C/ γ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	
0.0	11528.81	10818.58	8126.32	4861.48	2796.87	1619.21	1240.97	628.19	147.83	
45.0	11490.27	11000.27	8511.72	5268.90	2818.89	1669.86	1286.12	680.50	280.24	
90.0	11528.81	10840.61	8414.82	5186.31	2568.93	1633.52	1082.90	624.56	116.17	
135.0	11523.30	11237.01	9100.82	5924.07	3121.70	1760.15	1350.53	855.03	281.34	
180.0	11528.81	10923.74	8394.45	5336.62	2643.81	1650.59	1096.39	673.34	115.51	
225.0	11490.27	10726.09	8049.80	4568.58	2473.13	1610.95	1071.23	603.91	76.14	
270.0	11528.81	10906.67	8451.16	4999.12	2879.45	1629.12	1267.95	641.96	301.71	
315.0	11523.30	10325.83	7411.69	4270.72	2176.38	1495.88	1075.97	481.36	34.74	
360.0	11528.81	10818.58	8126.32	4861.48	2796.87	1619.21	1240.97	628.19	147.83	
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	
0.0	21.53	17.95	16.79	16.13	15.75	15.42	15.25	15.14	15.20	
45.0	22.85	18.44	17.23	16.63	16.13	15.86	15.64	15.47	15.47	
90.0	24.83	18.77	17.51	16.85	16.41	16.24	16.08	16.79	15.69	
135.0	26.32	18.88	17.45	16.68	16.24	15.97	15.75	16.02	15.47	
180.0	22.90	17.95	16.79	16.19	15.75	15.42	15.20	15.09	14.98	
225.0	24.11	18.28	17.07	16.41	15.97	15.69	15.53	15.36	15.42	
270.0	26.32	18.77	17.45	16.79	16.35	16.24	15.97	17.40	15.86	
315.0	21.36	17.95	16.90	16.41	16.08	15.97	15.80	17.95	15.80	
360.0	21.53	17.95	16.79	16.13	15.75	15.42	15.25	15.14	15.20	
C/ γ (°)	90.0									
0.0	14.87									
45.0	15.20									
90.0	15.09									
135.0	14.98									
180.0	14.87									
225.0	15.14									
270.0	15.09									
315.0	14.98									
360.0	14.87									