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Nata

LumCAT: 3-1546-A3
Luminaire: 99.02.73.172+92.76.365.00
Report No: NATA0100
Test No: GC2018091217
LampCAT: LUMINUS CXM-11-AC30
Lamp flux(lm): 2496.0
Number of Lamps: 1
Length(mm): 84
Phm Type: C

Voltage(V): 34.7000
Current(A): 0.4900
Power (W): 17.0030
PF: 0.0000
Ballast type: DC
Width(mm): 84
Height(mm): 0

Photometric Results

Lumens(lm): 2290.53
Efficiency(%): 91.77%
Lumens(lm)/Power(W): 137.81
Central intensity(cd): 9168.047
Maximum intensity(cd): 9168.047
Angle of maximum intensity: $C=0.0$ $\gamma=0.0$
Beam Angle(50%Imax): [C0/180]Total=23.6
[C90/270]Total=23.6
Field angle(10%Imax): [C0/180]Total=49.5
[C90/270]Total=49.5
Maximum s/h(1/2): C0_180=0.40 C90_270=0.40
Maximum s/h(1/4): C0_180=0.41 C90_270=0.41
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 93.88%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.493%

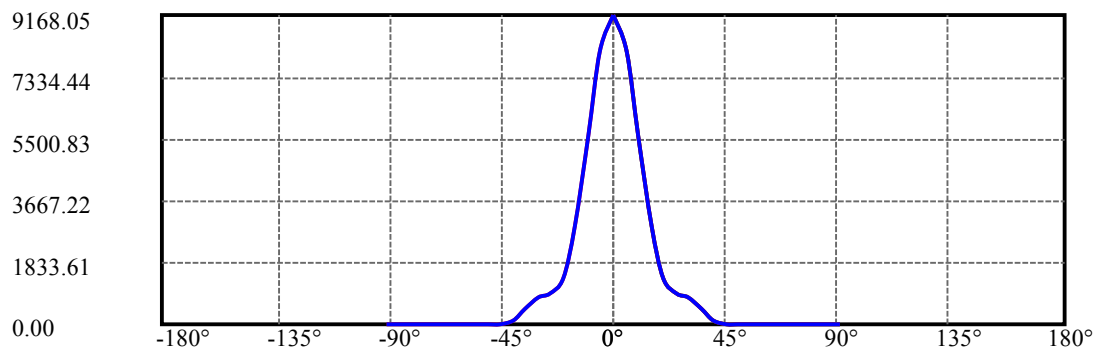
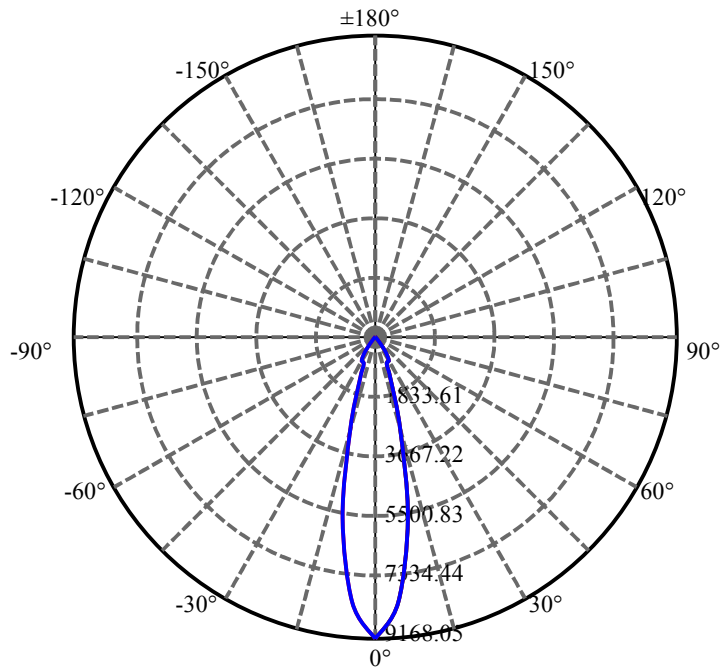
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9168.047	54.827	54.827	2.197%	2.394%
5.0	8102.672	387.092	441.918	15.508%	19.293%
10.0	5554.969	528.739	970.657	21.183%	42.377%
15.0	2879.297	408.481	1379.138	16.365%	60.210%
20.0	1352.517	253.562	1632.7	10.159%	71.280%
25.0	895.549	207.457	1840.157	8.312%	80.338%
30.0	790.763	216.723	2056.88	8.683%	89.799%
35.0	468.766	147.380	2204.26	5.905%	96.234%
40.0	101.152	35.639	2239.899	1.428%	97.789%
45.0	16.313	6.323	2246.222	.253%	98.065%
50.0	11.475	4.818	2251.04	.193%	98.276%
55.0	10.955	4.919	2255.959	.197%	98.491%
60.0	10.610	5.037	2260.995	.202%	98.710%
65.0	10.378	5.156	2266.151	.207%	98.936%
70.0	10.245	5.277	2271.428	.211%	99.166%
75.0	10.174	5.387	2276.815	.216%	99.401%
80.0	10.090	5.447	2282.261	.218%	99.639%
85.0	10.167	5.552	2287.813	.222%	99.881%
90.0	9.921	2.719	2290.532	.109%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2056.88	82.41%	89.80%
0-40	2239.90	89.74%	97.79%
0-60	2261.00	90.58%	98.71%
0-90	2287.81	91.66%	99.88%
0-120	2287.81	91.66%	99.88%
0-180	2290.53	91.77%	100.00%
60-90	31.85	1.28%	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%
0-24.81	1832.43	73.41%	80.00%

ZONAL LUMEN SUMMARY

0-10	970.66
10-20	662.04
20-30	424.18
30-40	183.02
40-50	11.14
50-60	9.96
60-70	10.43
70-80	10.83
80-90	5.55
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: —————

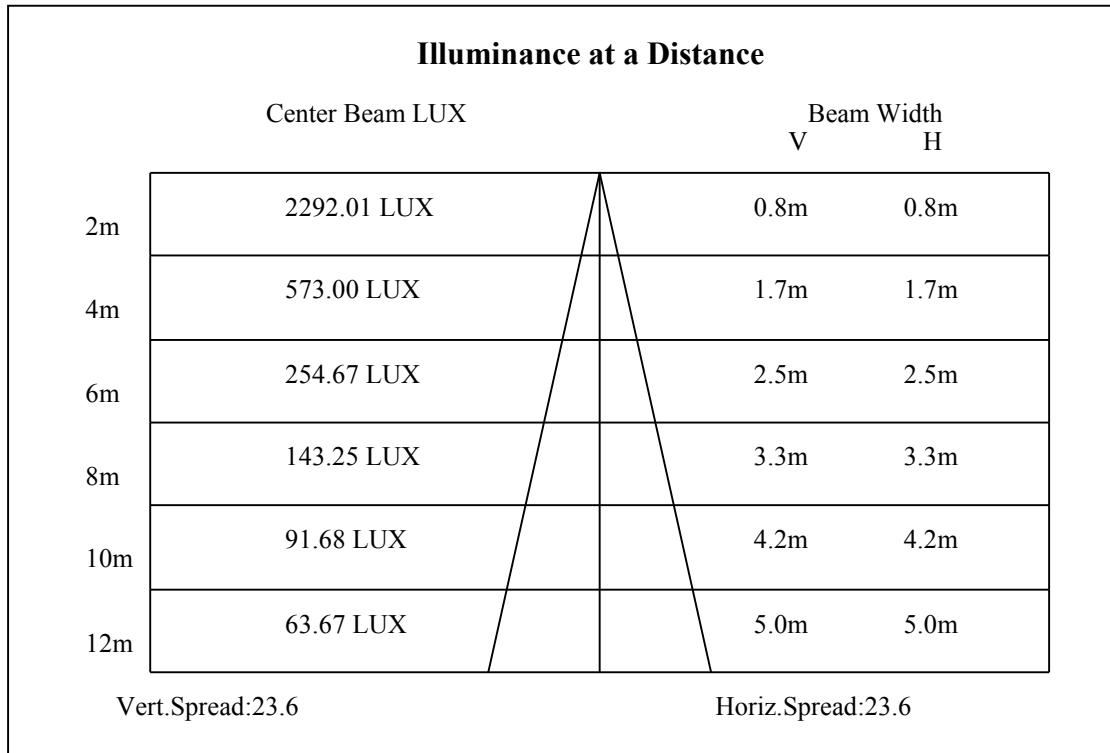
C90/C270: —————

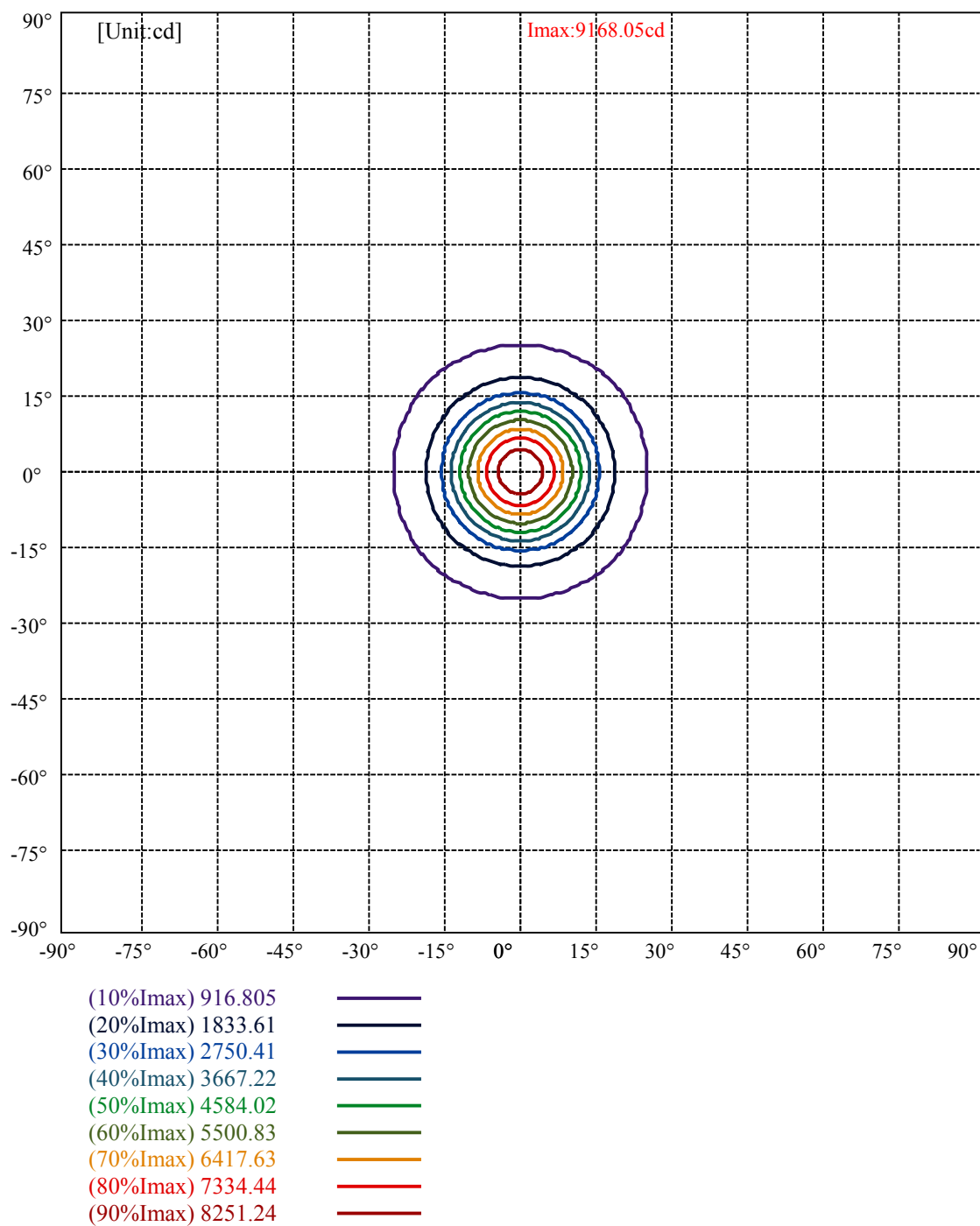
Field angle(10%Imax):C0/180Left:24.8 Right:24.8

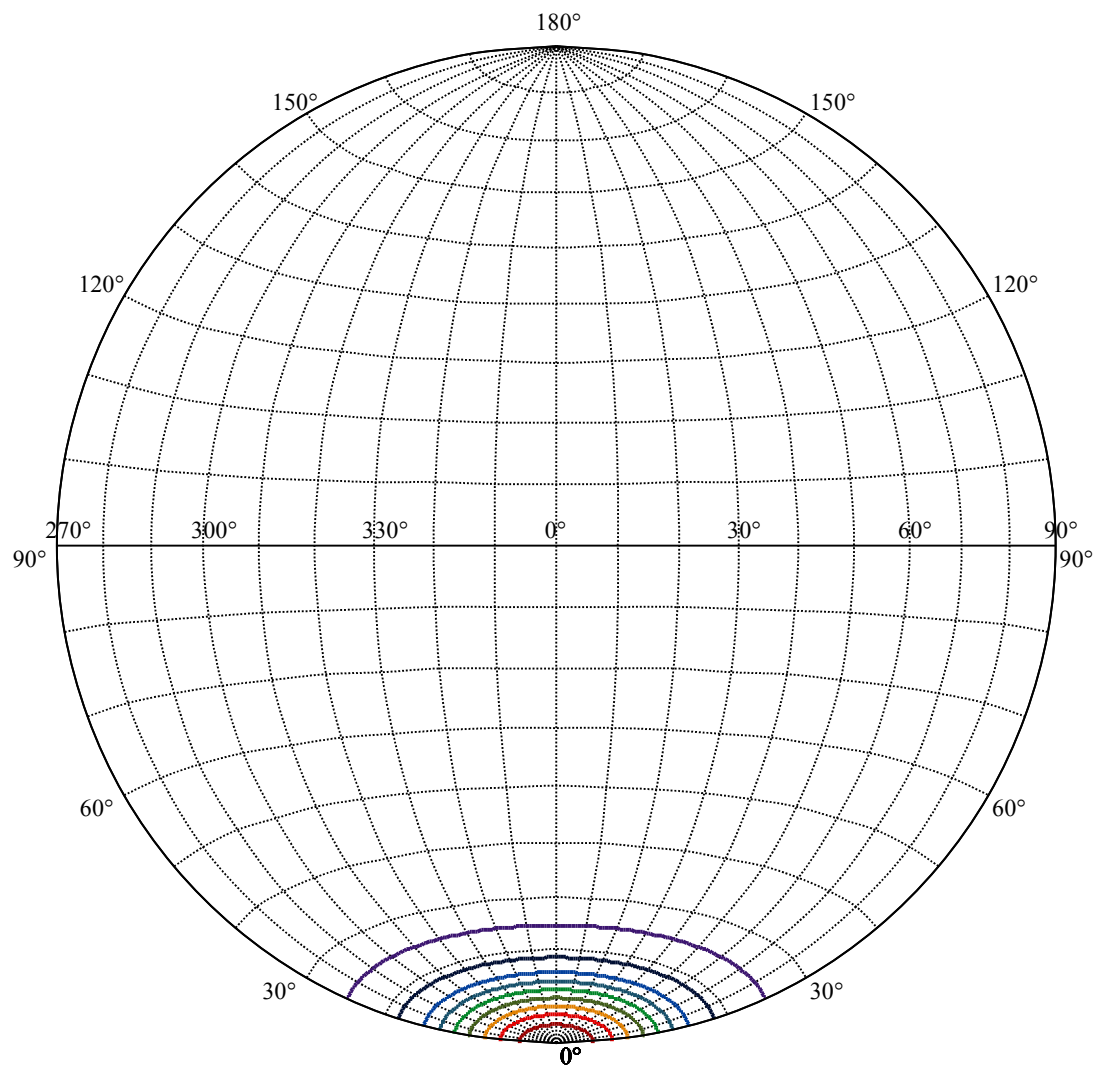
:C90/270Left:24.8 Right:24.8

Beam Angle(50%Imax):C0/180Left:11.8 Right:11.8

:C90/270Left:11.8 Right:11.8





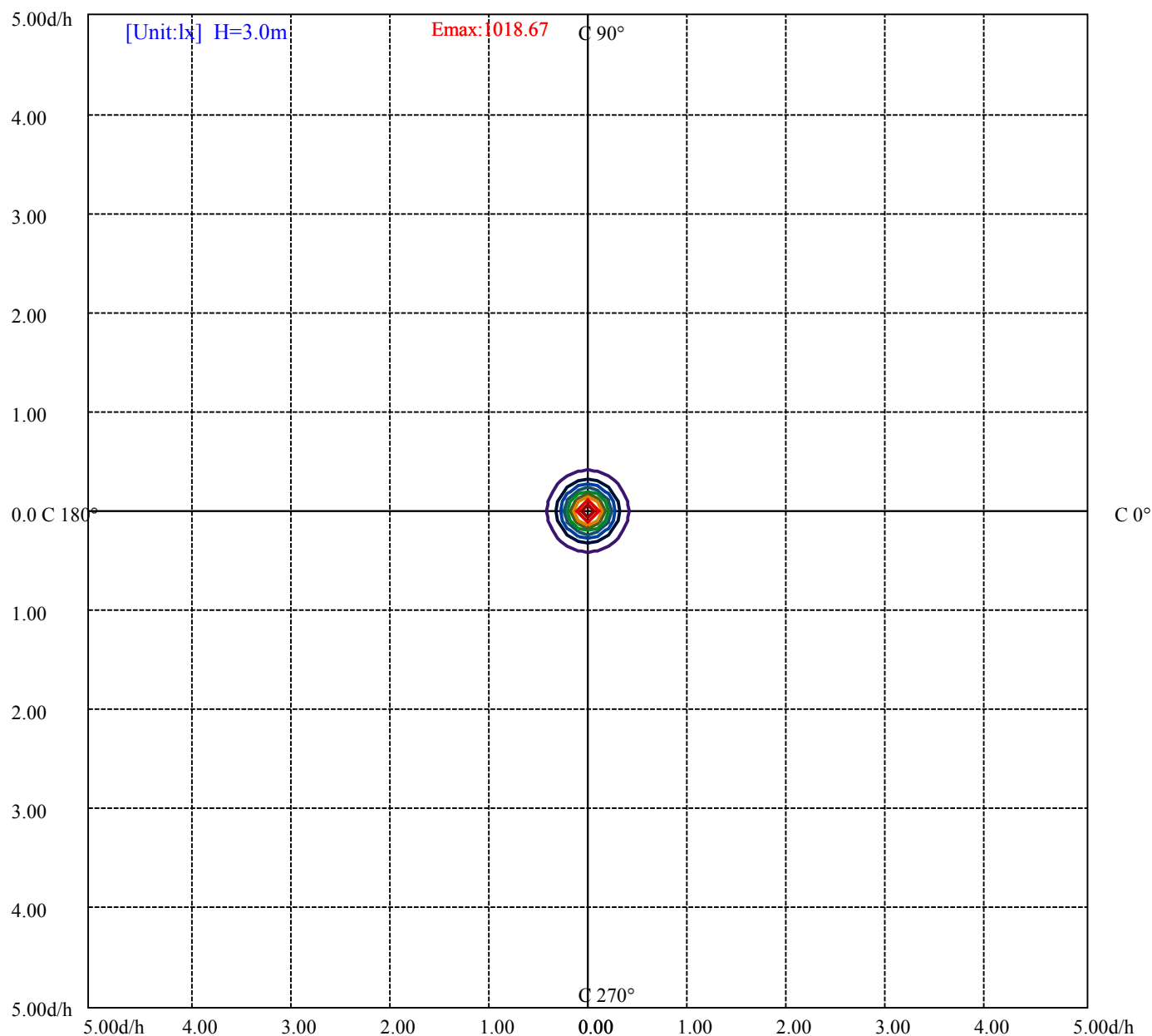


House

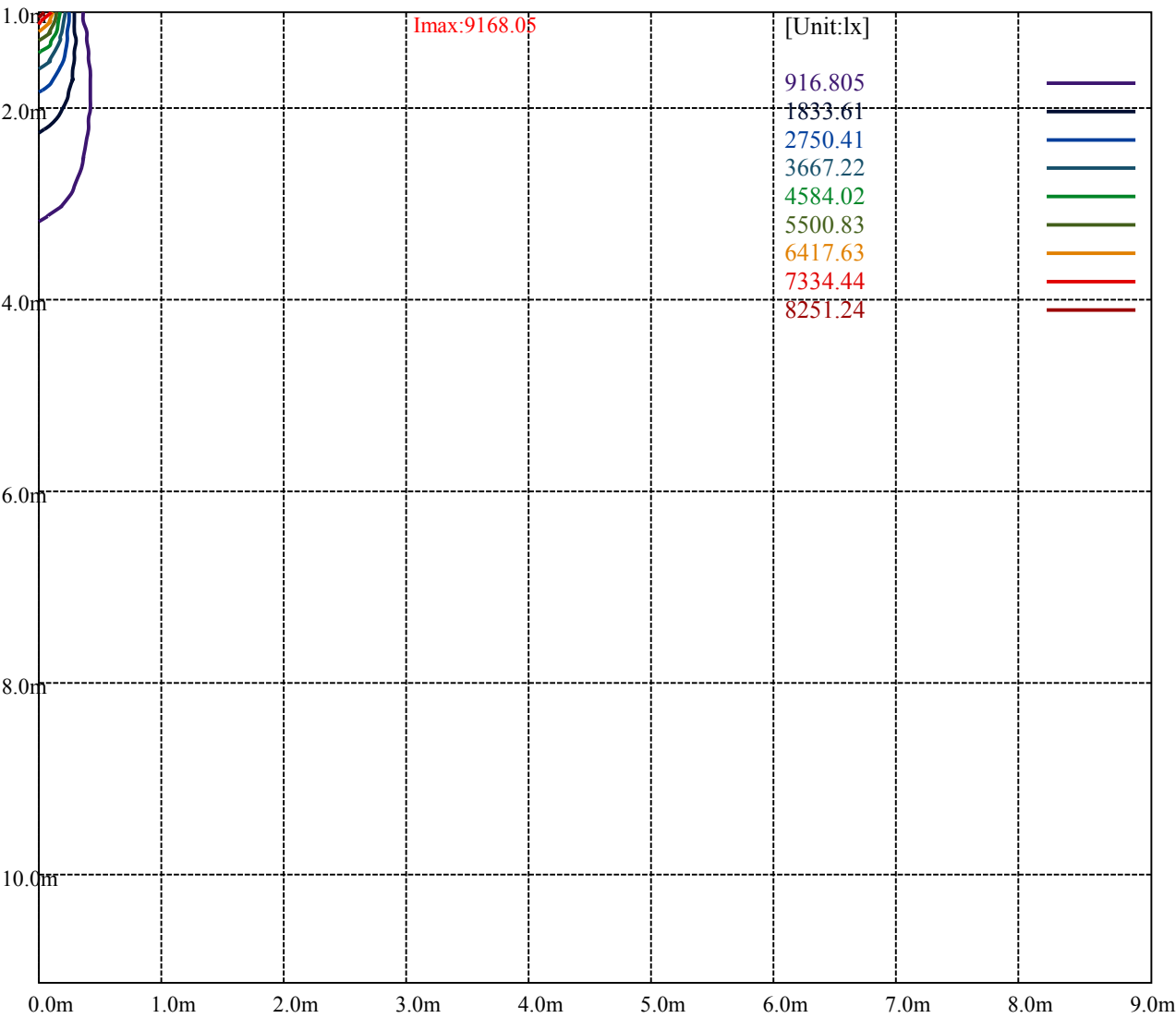
[Unit:cd]

Road

Imax:9168.05	
(10%Imax) 916.805	—
(20%Imax) 1833.61	—
(30%Imax) 2750.41	—
(40%Imax) 3667.22	—
(50%Imax) 4584.02	—
(60%Imax) 5500.83	—
(70%Imax) 6417.63	—
(80%Imax) 7334.44	—
(90%Imax) 8251.24	—



(10%Emax) 101.8668	—
(20%Emax) 203.7333	—
(30%Emax) 305.6	—
(40%Emax) 407.4678	—
(50%Emax) 509.3344	—
(60%Emax) 611.2011	—
(70%Emax) 713.0677	—
(80%Emax) 814.9344	—
(90%Emax) 916.8011	—



Luminance Table

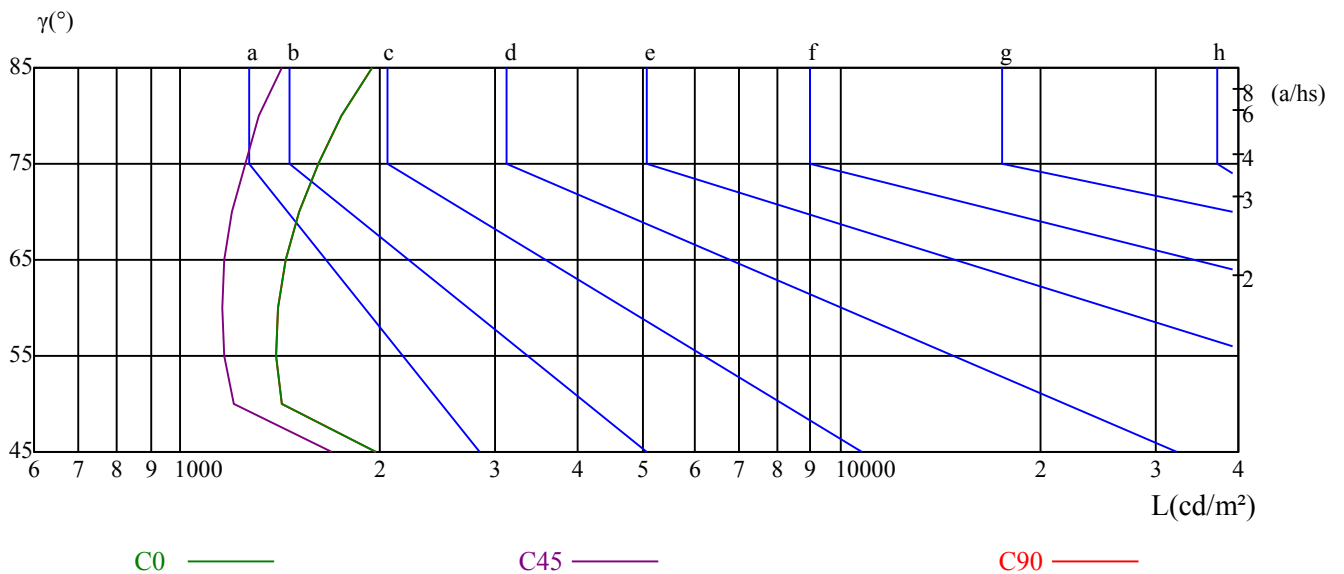
γ	45	50	55	60	65	70	75	80	85
C0	1976	1421	1399	1409	1448	1517	1618	1747	1949
C45	1698	1203	1165	1155	1166	1198	1250	1317	1427
C90	1976	1421	1399	1409	1448	1517	1618	1747	1949

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3480	3480	3480	5571	5571	5571	16533	16533	16533

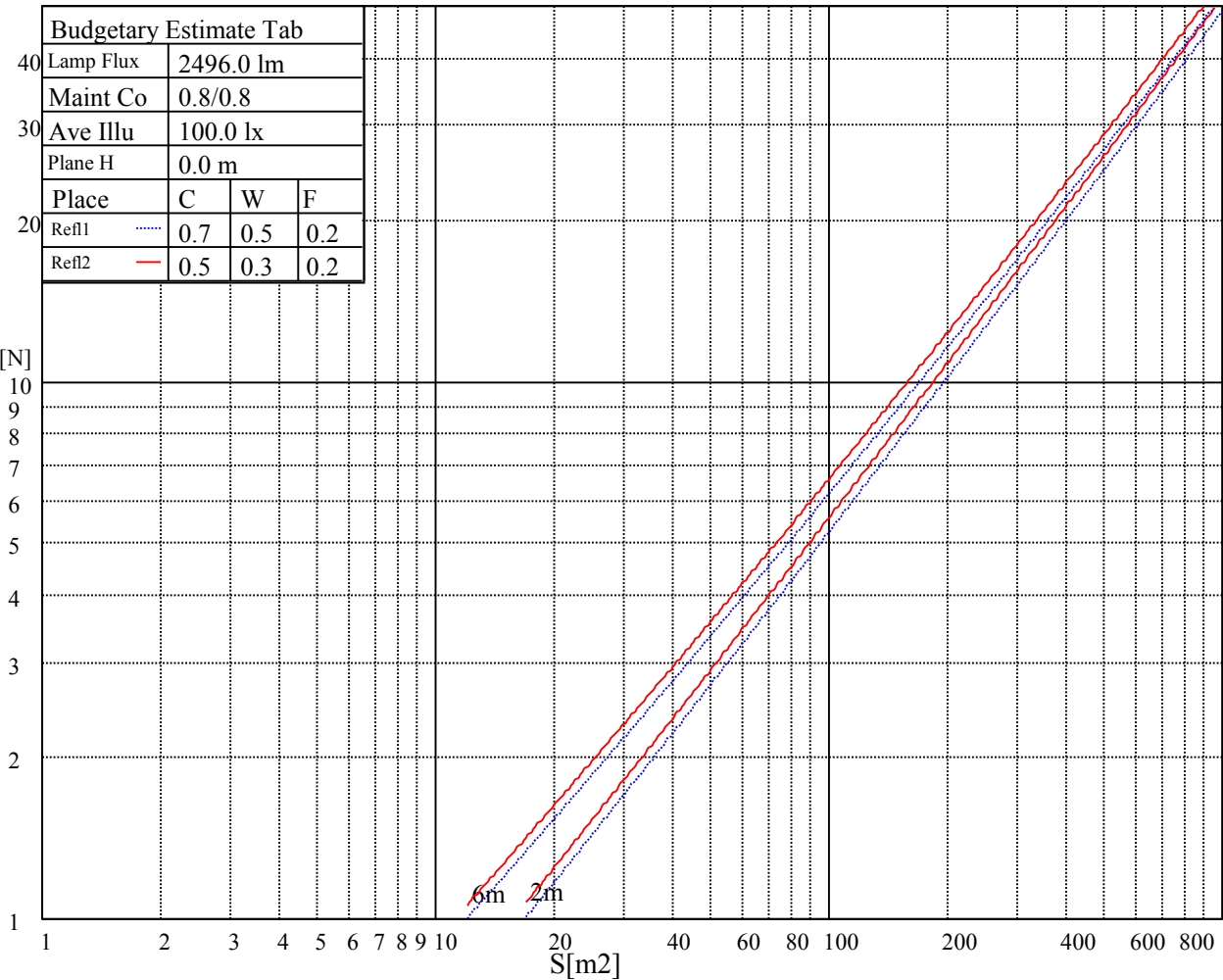
Glare Table

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

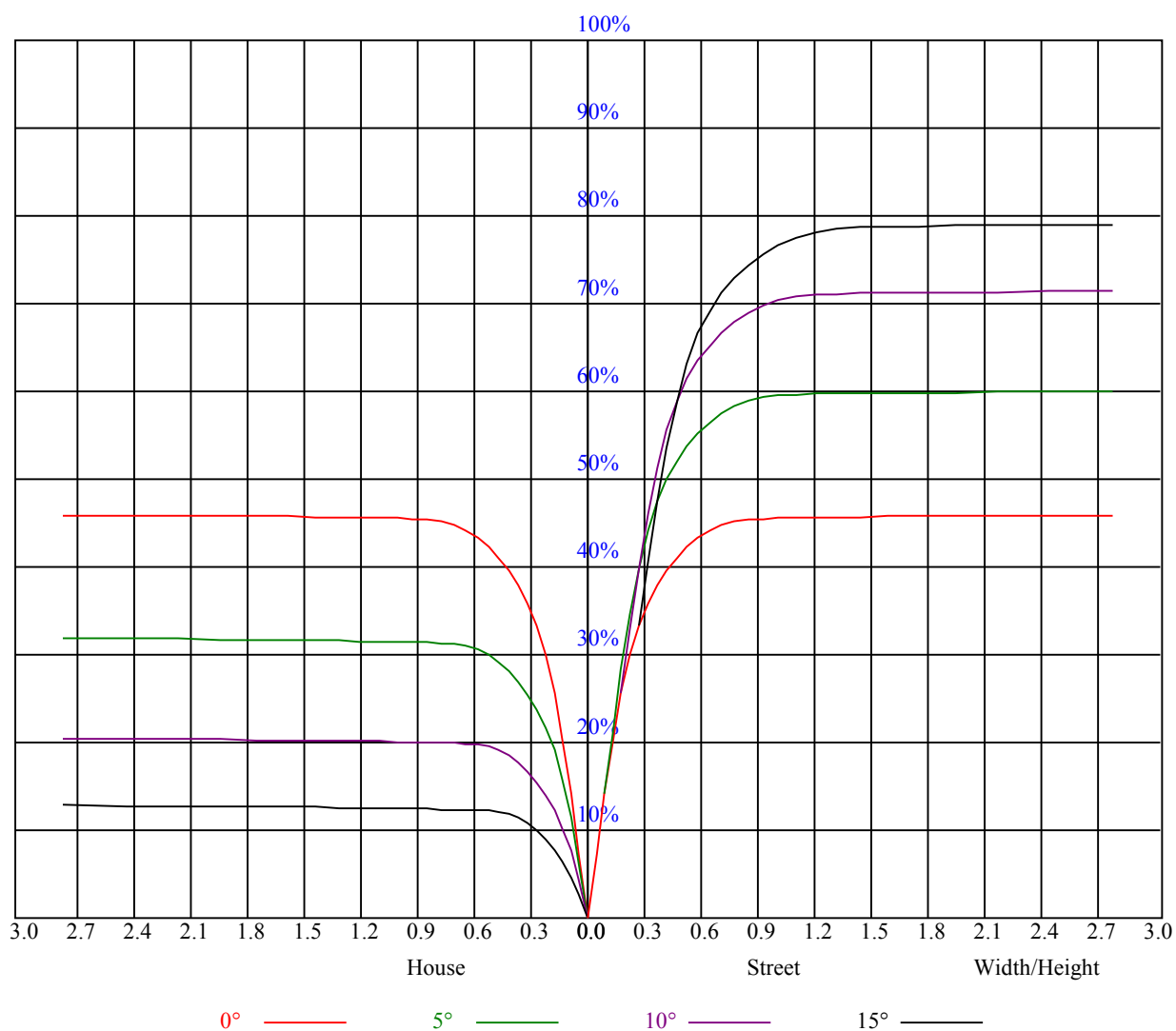
Luminance Limiting Curve



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	-0.56	0.36	-0.19	0.67	0.98	-0.61	0.31	-0.24	0.62	0.93
	3H	1.77	2.58	2.16	2.91	3.28	1.73	2.53	2.11	2.87	3.24
	4H	3.04	3.79	3.45	4.14	4.54	2.99	3.74	3.40	4.09	4.48
	6H	4.37	5.05	4.79	5.43	5.83	4.33	5.01	4.75	5.39	5.79
	8H	5.04	5.68	5.48	6.08	6.49	5.00	5.63	5.43	6.03	6.44
	12H	6.10	6.71	6.53	7.09	7.52	6.02	6.63	6.46	7.02	7.45
4H	2H	-0.06	0.69	0.35	1.04	1.44	-0.10	0.65	0.31	1.00	1.40
	3H	2.57	3.18	2.99	3.59	4.00	2.53	3.15	2.95	3.56	3.96
	4H	4.01	4.56	4.45	4.99	5.44	3.97	4.52	4.41	4.94	5.39
	6H	5.44	5.90	5.91	6.35	6.83	5.40	5.87	5.87	6.32	6.79
	8H	6.22	6.66	6.70	7.11	7.58	6.18	6.61	6.66	7.06	7.54
	12H	7.27	7.64	7.76	8.13	8.61	7.19	7.57	7.69	8.06	8.54
8H	4H	4.46	4.89	4.93	5.34	5.82	4.42	4.86	4.90	5.31	5.79
	6H	6.12	6.46	6.63	6.96	7.45	6.09	6.43	6.60	6.93	7.42
	8H	7.06	7.36	7.59	7.88	8.38	7.02	7.32	7.55	7.85	8.34
	12H	8.23	8.49	8.75	8.99	9.57	8.17	8.43	8.69	8.93	9.51
12H	4H	4.55	4.92	5.04	5.41	5.89	4.51	4.89	5.01	5.38	5.86
	6H	6.49	6.59	6.83	7.07	7.62	6.46	6.57	6.80	7.04	7.59
	8H	7.33	7.59	7.85	8.09	8.67	7.29	7.55	7.82	8.05	8.63
Variation with the observer position at spacings:											
S = 1.0H		5.5/-7.7					5.5/-7.7				
S = 1.5H		7.8/-6.0					7.8/-6.0				
S = 2.0H		9.4/-4.8					9.4/-4.8				
Standard tables:		BK2					BK2				
Uncorrected UGR		-3.8					-3.8				



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	1.09	1.09	1.09	1.04	1.04	1.04	1.00	1.00	1.00	0.96	0.96	0.96	0.94
1	1.03	1.00	0.98	1.01	0.98	0.96	0.97	0.95	0.93	0.93	0.92	0.90	0.90	0.89	0.88	0.86
2	0.97	0.94	0.91	0.96	0.93	0.90	0.93	0.90	0.88	0.90	0.88	0.86	0.87	0.86	0.84	0.83
3	0.93	0.89	0.86	0.92	0.88	0.85	0.89	0.86	0.84	0.87	0.84	0.82	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	0.81	0.79	0.83	0.80	0.78	0.77
5	0.86	0.81	0.78	0.85	0.81	0.78	0.83	0.80	0.77	0.82	0.79	0.76	0.80	0.78	0.76	0.74
6	0.82	0.78	0.75	0.82	0.78	0.75	0.81	0.77	0.74	0.79	0.76	0.74	0.78	0.75	0.73	0.72
7	0.80	0.75	0.72	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.70
8	0.77	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.68
9	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
10	0.73	0.69	0.66	0.72	0.68	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.64



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	9239.63	7741.69	5429.25	2629.13	1280.25	855.00	784.69	401.06	30.32		
45.0	9154.69	8628.19	6489.56	3459.38	1627.88	944.44	812.25	648.56	290.81		
90.0	9219.94	8667.00	6107.06	3269.25	1539.00	929.14	805.16	609.58	66.71		
135.0	9057.94	8955.00	6805.13	3959.44	1756.69	978.19	822.38	701.44	291.38		
180.0	9239.63	8467.88	5965.88	2978.44	1114.93	910.46	793.41	537.81	48.21		
225.0	9154.69	7486.31	4384.13	2199.94	1108.35	847.24	770.40	286.93	26.94		
270.0	9219.94	7612.88	4925.81	2409.19	1297.13	865.69	780.75	336.38	29.76		
315.0	9057.94	7262.44	4332.94	2129.63	1095.92	834.24	757.07	228.38	25.09		
360.0	9239.63	7741.69	5429.25	2629.13	1280.25	855.00	784.69	401.06	30.32		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	12.32	11.31	10.80	10.52	10.29	10.18	10.13	10.07	10.01		
45.0	24.08	11.64	11.14	10.74	10.46	10.29	10.24	10.13	10.13		
90.0	18.56	11.70	11.08	10.69	10.46	10.29	10.18	10.07	10.13		
135.0	23.18	11.87	11.19	10.74	10.52	10.29	10.24	10.13	10.07		
180.0	16.09	11.42	10.91	10.58	10.35	10.18	10.13	10.07	10.01		
225.0	11.98	11.19	10.80	10.52	10.29	10.18	10.13	10.07	10.35		
270.0	12.32	11.42	10.91	10.58	10.35	10.29	10.18	10.13	10.52		
315.0	11.98	11.25	10.80	10.52	10.29	10.24	10.18	10.07	10.13		
360.0	12.32	11.31	10.80	10.52	10.29	10.18	10.13	10.07	10.01		
C/γ(°)	90.0										
0.0	9.90										
45.0	9.96										
90.0	9.96										
135.0	9.90										
180.0	9.84										
225.0	9.96										
270.0	9.96										
315.0	9.90										
360.0	9.90										