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Nata

LumCAT: 1-0803-S
Luminaire: 92.70.208.00
Report No: NATA0100
Test No: GC2019103004
LampCAT: OSRAM 5050
Lamp flux(lm): 878.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 34.0000
Current(A): 0.2970
Power (W): 10.1000
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 714.48
Efficiency(%): 81.38%
Lumens(lm)/Power(W): 70.74
Central intensity(cd): 1844.438
Maximum intensity(cd): 1851.188
Angle of maximum intensity: C=90.0 $\gamma=0.0$
Beam Angle(50%Imax): [C0/180]Total=35.4
[C90/270]Total=35.0
Field angle(10%Imax): [C0/180]Total=56.1
[C90/270]Total=56.1
Maximum s/h(1/2): C0_180=0.56 C90_270=0.58
Maximum s/h(1/4): C0_180=0.57 C90_270=0.59
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 81.38%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.319%

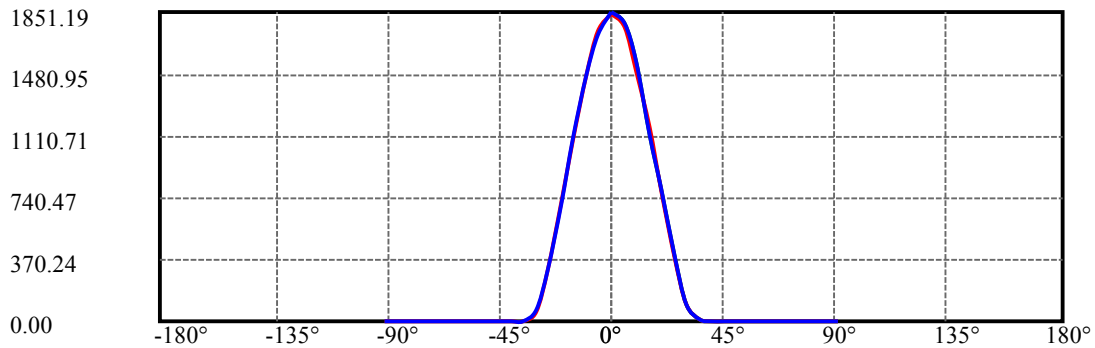
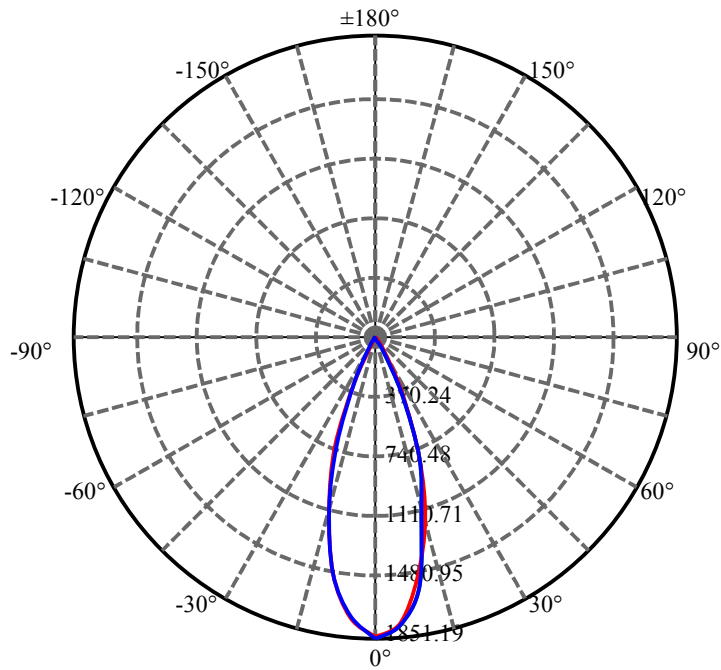
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1842.820	0.000	0	.000%	.000%
5.0	1745.684	42.900	42.9	4.886%	6.004%
10.0	1500.539	116.128	159.027	13.226%	22.258%
15.0	1117.997	155.330	314.357	17.691%	43.998%
20.0	755.367	154.392	468.748	17.584%	65.607%
25.0	399.614	121.136	589.885	13.797%	82.562%
30.0	168.623	71.911	661.796	8.190%	92.627%
35.0	23.586	28.304	690.1	3.224%	96.588%
40.0	5.055	4.779	694.879	.544%	97.257%
45.0	4.275	1.728	696.606	.197%	97.499%
50.0	4.532	1.780	698.386	.203%	97.748%
55.0	4.630	1.992	700.378	.227%	98.027%
60.0	4.405	2.088	702.466	.238%	98.319%
65.0	4.057	2.057	704.523	.234%	98.607%
70.0	3.966	2.031	706.555	.231%	98.891%
75.0	3.881	2.051	708.606	.234%	99.178%
80.0	3.730	2.037	710.642	.232%	99.463%
85.0	3.547	1.977	712.62	.225%	99.740%
90.0	3.234	1.857	714.477	.211%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	661.80	75.38%	92.63%
0-40	694.88	79.14%	97.26%
0-60	702.47	80.01%	98.32%
0-90	712.62	81.16%	99.74%
0-120	712.62	81.16%	99.74%
0-180	714.48	81.38%	100.00%
60-90	12.24	1.39%	1.71%
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%
0-24.24	571.58	65.10%	80.00%

ZONAL LUMEN SUMMARY

0-10	159.03
10-20	309.72
20-30	193.05
30-40	33.08
40-50	3.51
50-60	4.08
60-70	4.09
70-80	4.09
80-90	1.98
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



C90(Max): —————

C0/C180: —————

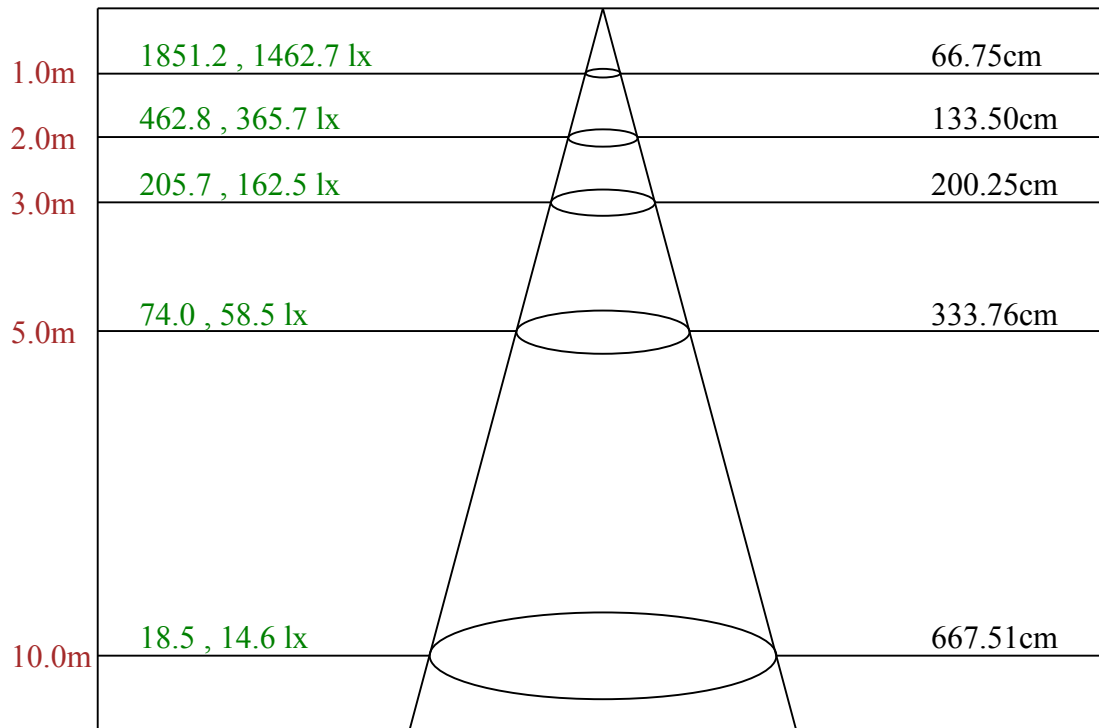
C90/C270: —————

Field angle(10%Imax):C0/180Left:27.5 Right:28.6

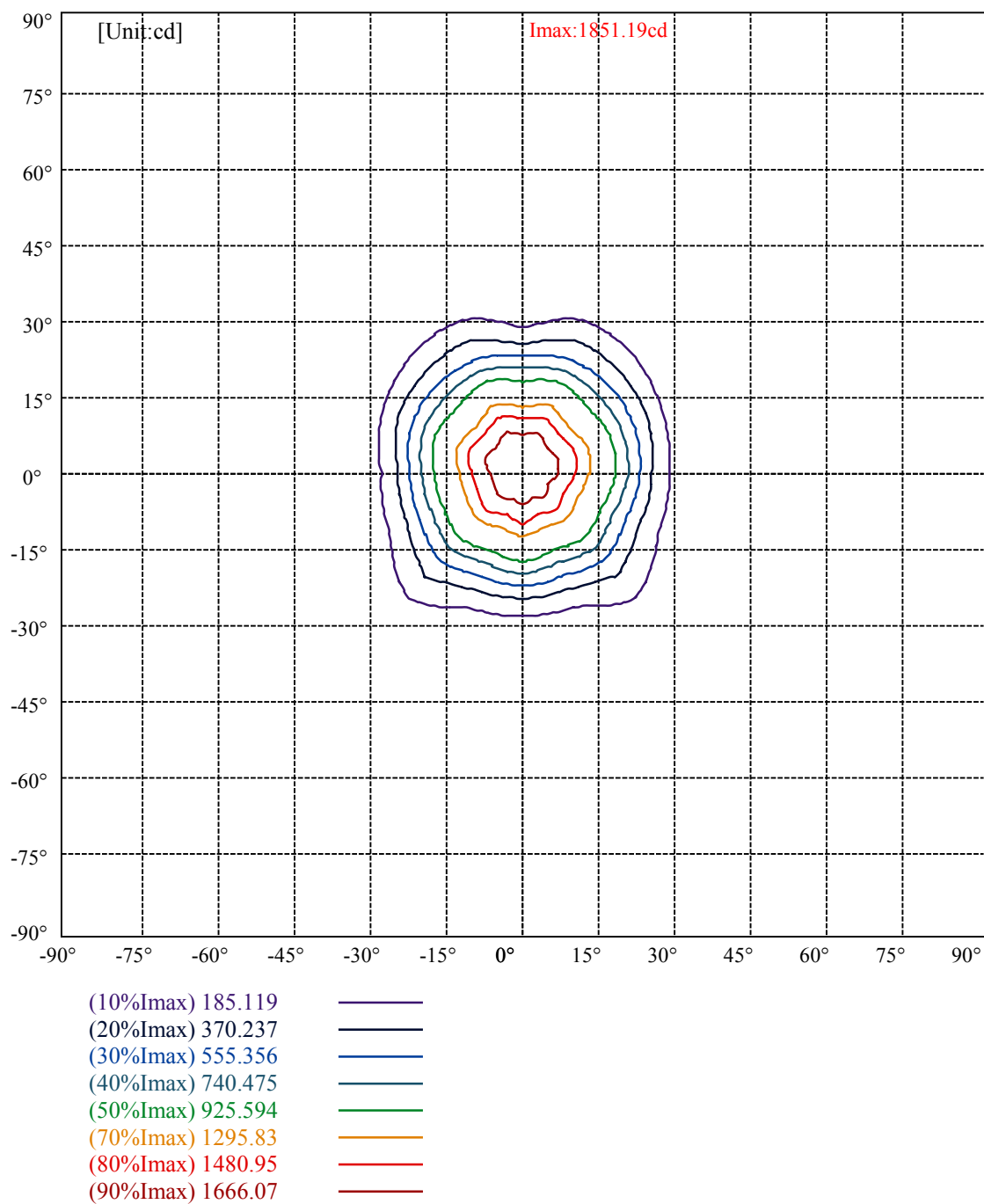
:C90/270Left:27.6 Right:28.5

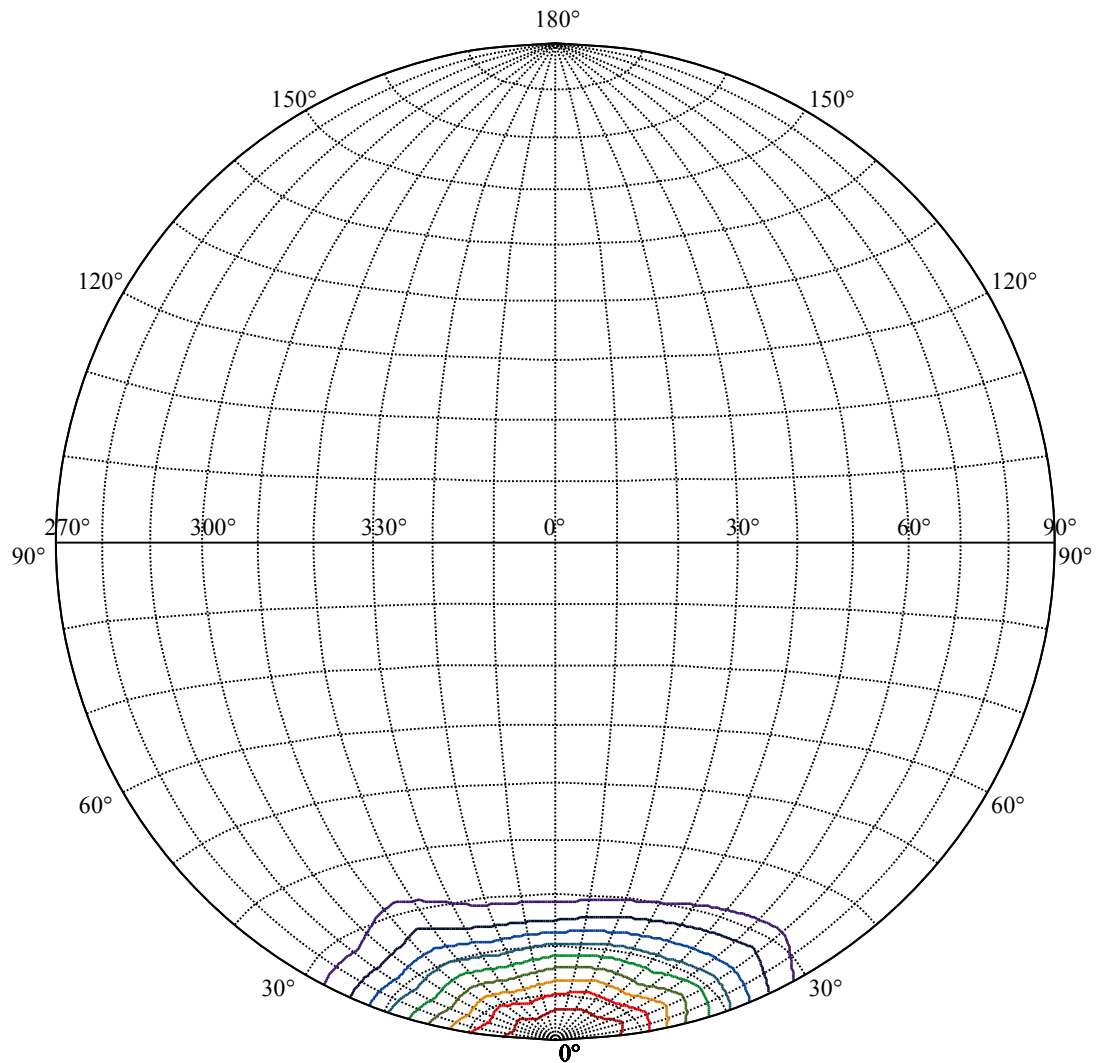
Beam Angle(50%Imax):C0/180Left:17.2 Right:18.2

:C90/270Left:17.1 Right:17.9



Max , Ave Beam angle of C90 plane 36.91





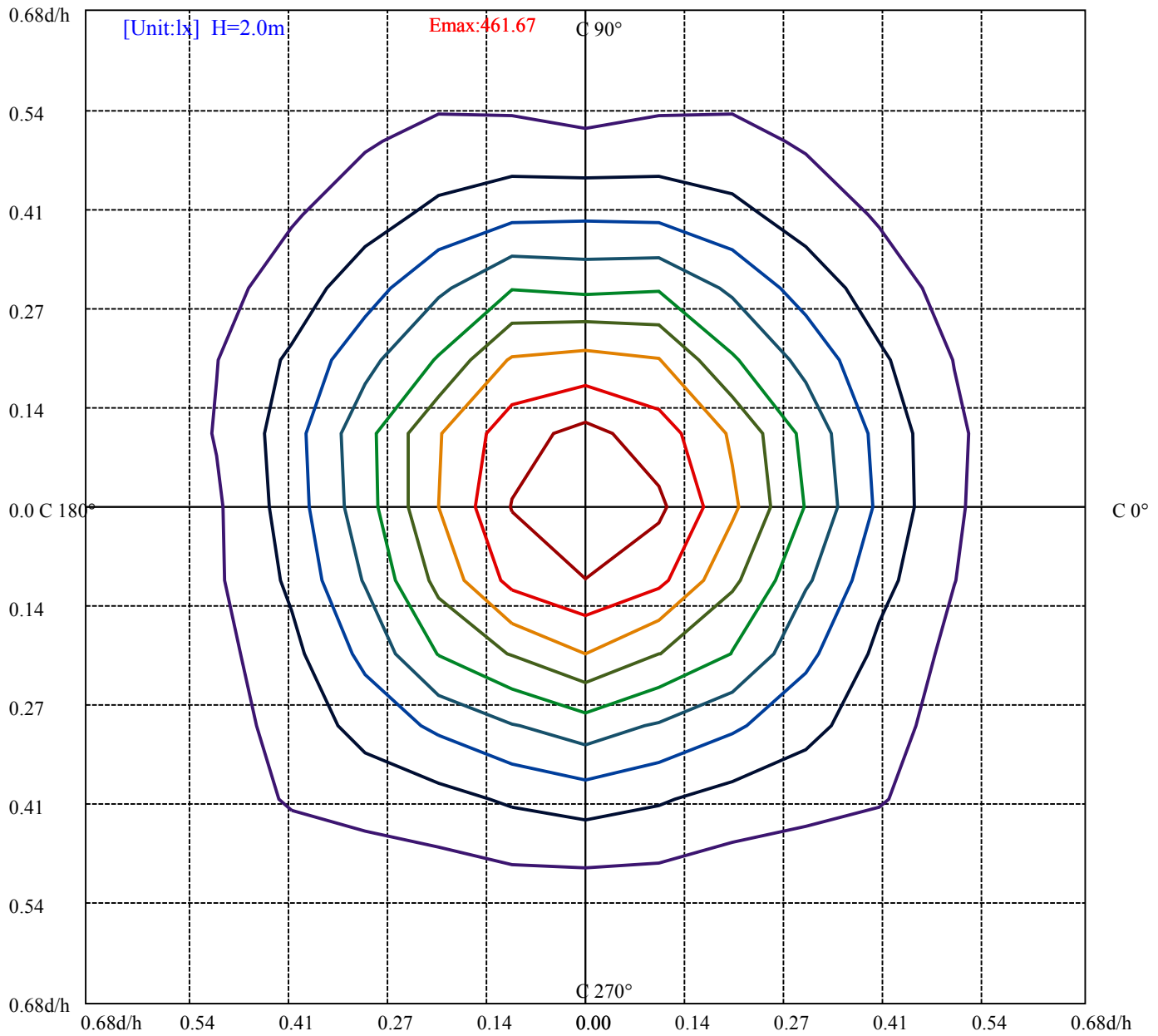
House

[Unit:cd]

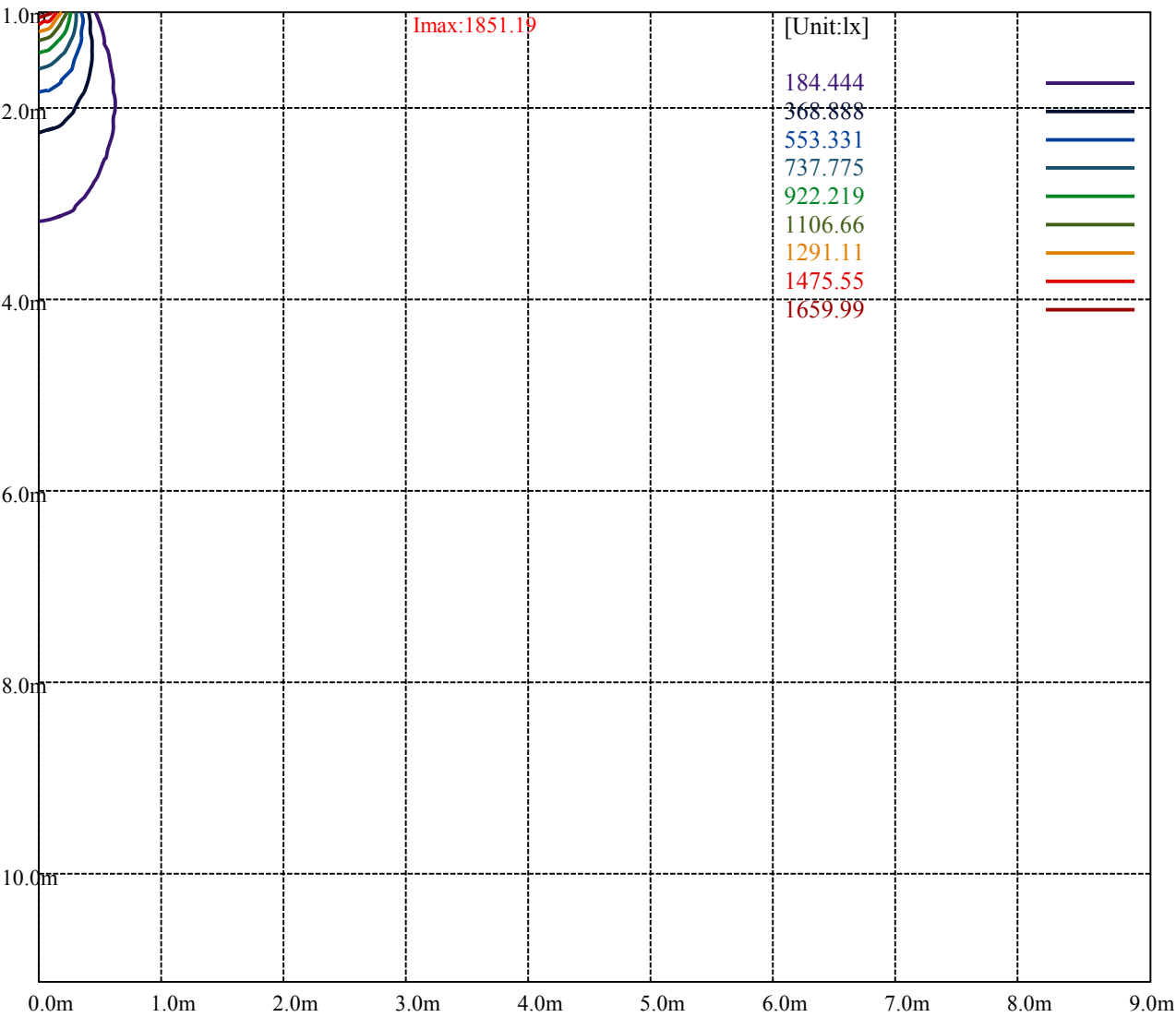
Road

Imax:1851.19

(10%Imax)	185.119	—
(20%Imax)	370.237	—
(30%Imax)	555.356	—
(40%Imax)	740.475	—
(50%Imax)	925.594	—
(60%Imax)	1110.71	—
(70%Imax)	1295.83	—
(80%Imax)	1480.95	—
(90%Imax)	1666.07	—



(10%Emax)	46.167	
(20%Emax)	92.33425	
(30%Emax)	138.5013	
(40%Emax)	184.6685	
(50%Emax)	230.8355	
(60%Emax)	277.0025	
(70%Emax)	323.17	
(80%Emax)	369.3375	
(90%Emax)	415.505	



Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

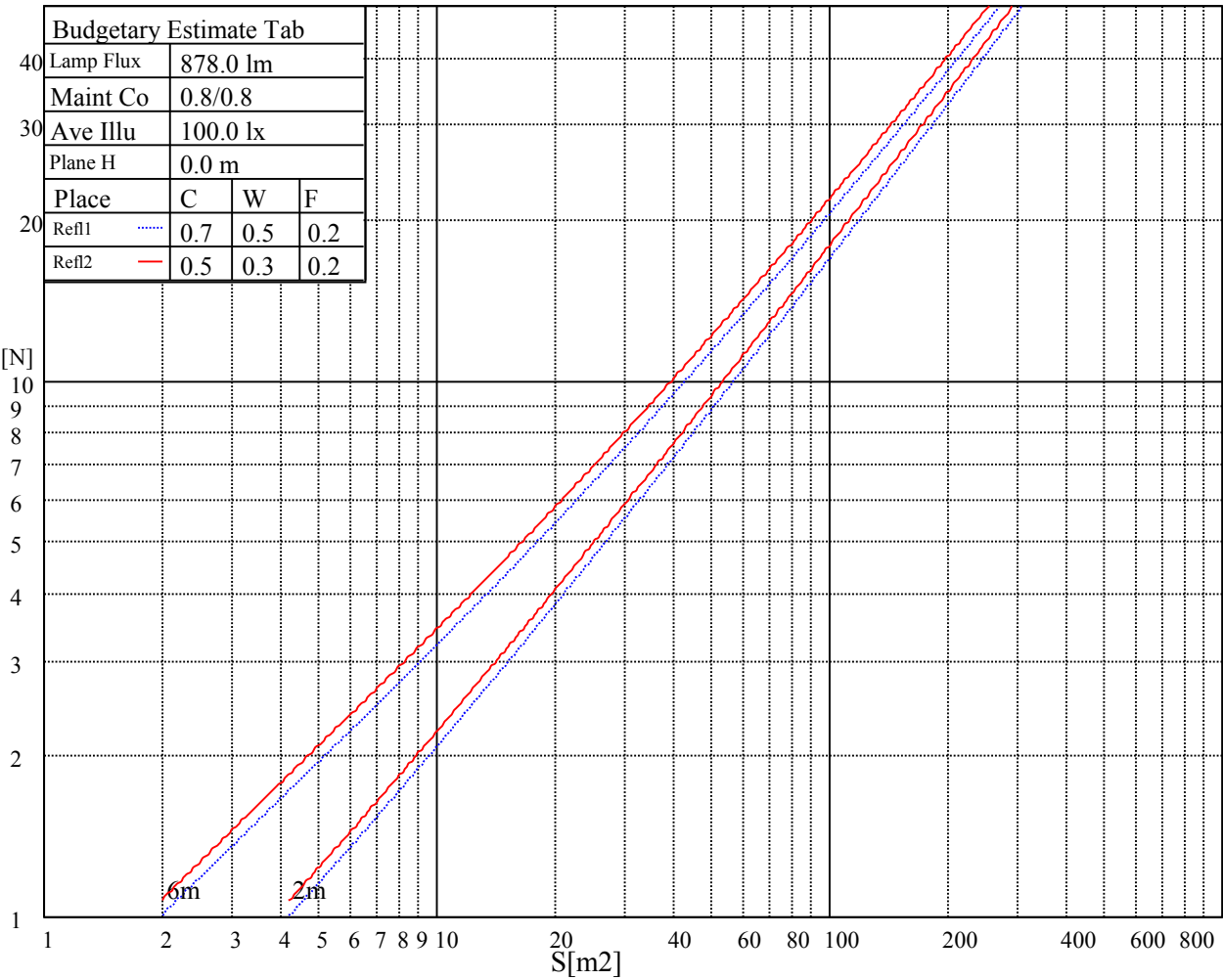
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

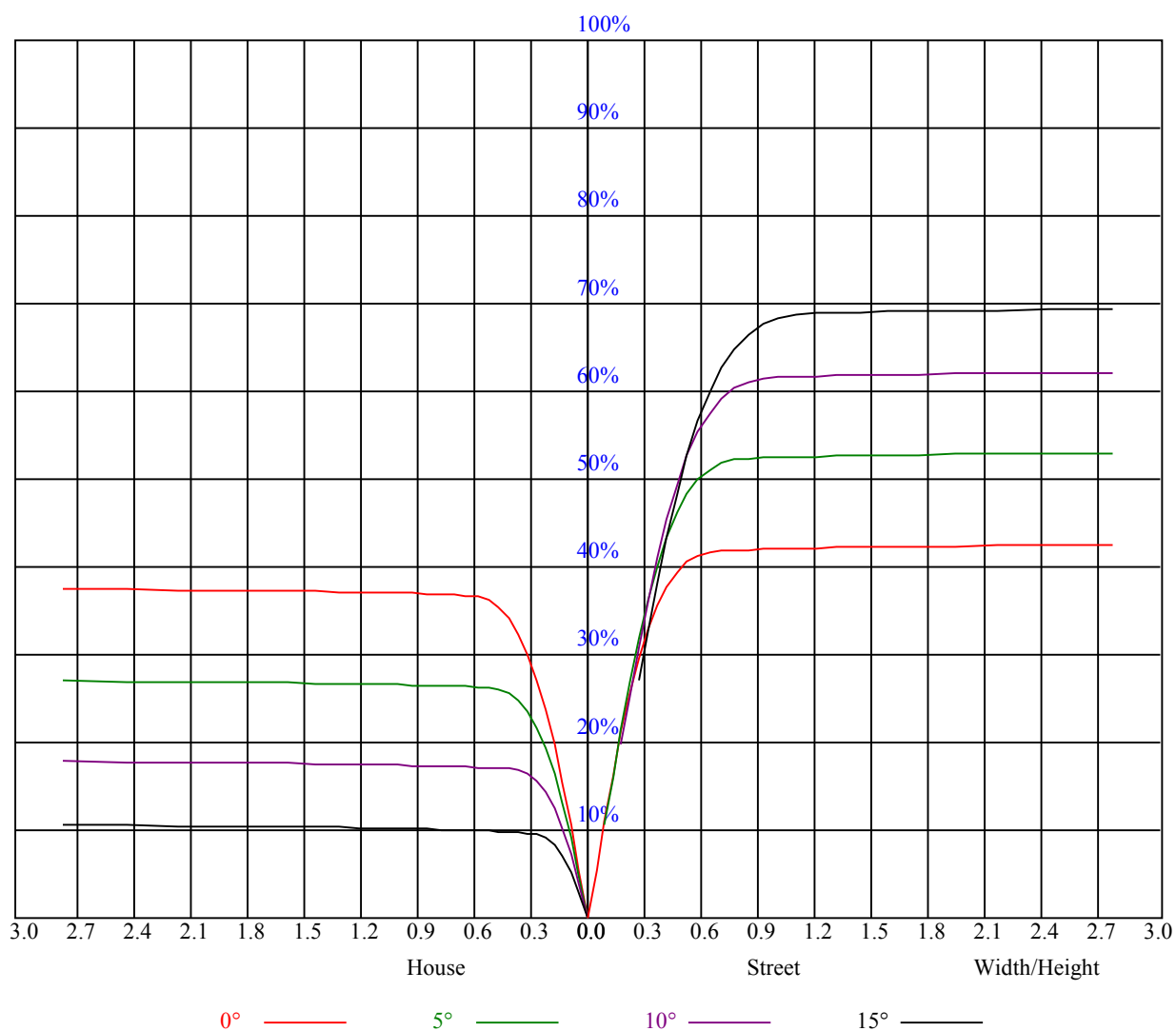
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





RHOC	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	0.97	0.97	0.97	0.95	0.95	0.95	0.90	0.90	0.90	0.87	0.87	0.87	0.83	0.83	0.83	0.81
1	0.91	0.89	0.88	0.89	0.88	0.86	0.86	0.85	0.83	0.83	0.82	0.81	0.80	0.79	0.79	0.77
2	0.86	0.83	0.81	0.85	0.82	0.80	0.82	0.80	0.78	0.80	0.78	0.76	0.77	0.76	0.75	0.74
3	0.82	0.78	0.75	0.80	0.77	0.75	0.78	0.76	0.74	0.76	0.74	0.73	0.75	0.73	0.71	0.70
4	0.78	0.74	0.71	0.77	0.73	0.71	0.75	0.72	0.70	0.74	0.71	0.69	0.72	0.70	0.68	0.67
5	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.70	0.67	0.65	0.64
6	0.71	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.68	0.65	0.63	0.67	0.65	0.63	0.62
7	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.65	0.62	0.60	0.59
8	0.65	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.63	0.60	0.58	0.63	0.60	0.58	0.57
9	0.63	0.59	0.57	0.63	0.59	0.56	0.62	0.59	0.56	0.61	0.58	0.56	0.61	0.58	0.56	0.55
10	0.61	0.57	0.54	0.60	0.57	0.54	0.60	0.56	0.54	0.59	0.56	0.54	0.59	0.56	0.54	0.53



Intensity data(cd)									Appendix Page: 14 Total:14		
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	1844.44	1764.56	1494.56	1162.69	786.94	379.13	108.79	11.03	4.78		
22.5	1841.63	1779.19	1561.50	1205.44	818.44	457.88	167.29	13.89	4.89		
45.0	1846.69	1757.81	1518.75	1113.81	795.09	477.56	223.99	64.80	5.96		
67.5	1839.94	1810.69	1603.69	1255.50	865.13	482.63	289.13	26.61	4.67		
90.0	1851.19	1779.19	1553.63	1112.51	789.98	388.86	98.33	8.66	5.40		
112.5	1836.56	1809.00	1617.75	1272.94	867.94	475.31	295.31	18.62	4.56		
135.0	1843.88	1767.38	1545.75	1105.99	796.28	471.88	225.96	60.30	7.48		
157.5	1838.25	1794.38	1584.00	1208.25	819.00	456.19	173.31	16.20	4.16		
180.0	1844.44	1733.63	1467.56	1083.15	715.50	307.01	58.05	4.84	3.88		
202.5	1841.63	1710.56	1448.44	1055.93	676.52	335.53	105.13	7.31	4.16		
225.0	1846.69	1742.06	1481.63	1103.63	742.50	443.25	293.63	59.18	6.13		
247.5	1839.94	1676.81	1391.06	1001.08	653.40	322.59	93.09	8.61	4.67		
270.0	1851.19	1716.75	1470.94	1089.00	700.88	312.19	67.73	5.74	5.01		
292.5	1836.56	1673.44	1388.25	987.92	638.83	308.31	80.61	7.20	4.89		
315.0	1843.88	1730.25	1467.56	1083.94	740.25	425.25	286.31	53.78	5.51		
337.5	1838.25	1685.25	1413.56	1046.19	679.22	350.27	131.34	10.63	4.73		
360.0	1844.44	1764.56	1494.56	1162.69	786.94	379.13	108.79	11.03	4.78		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	3.88	3.60	3.49	3.49	3.49	3.43	3.38	3.32	3.94		
22.5	4.28	4.22	4.39	4.22	3.94	3.83	3.77	3.71	3.71		
45.0	3.94	5.01	5.40	5.51	5.12	4.89	4.78	4.28	3.60		
67.5	5.18	5.23	5.40	5.06	4.11	3.94	3.99	3.88	3.54		
90.0	5.18	5.18	5.12	4.28	3.66	3.60	3.54	4.05	3.49		
112.5	5.12	5.12	5.23	5.01	3.88	3.77	3.60	3.71	3.49		
135.0	3.71	5.06	5.29	5.34	4.95	4.67	4.56	3.71	3.43		
157.5	3.99	4.11	4.39	4.33	3.99	4.05	4.05	3.83	3.49		
180.0	3.54	3.49	3.43	3.43	3.43	3.38	3.38	3.32	3.21		
202.5	3.94	3.94	3.99	3.88	3.83	3.88	3.77	3.66	3.54		
225.0	3.83	4.73	4.89	4.95	4.56	4.50	4.39	3.94	3.54		
247.5	4.56	4.67	4.73	4.11	3.94	3.88	3.88	3.66	3.49		
270.0	4.67	4.56	4.50	3.77	3.60	3.54	3.54	3.83	3.49		
292.5	4.61	4.73	4.73	4.05	3.77	3.66	3.60	3.60	3.49		
315.0	3.88	4.78	4.95	5.06	4.78	4.56	3.99	3.60	3.49		
337.5	4.11	4.11	4.16	3.99	3.88	3.88	3.88	3.60	3.83		
360.0	3.88	3.60	3.49	3.49	3.49	3.43	3.38	3.32	3.94		
C/γ(°)	90.0										
0.0	3.15										
22.5	3.26										
45.0	3.32										
67.5	3.26										
90.0	3.21										
112.5	3.21										
135.0	3.21										
157.5	3.21										
180.0	3.15										
202.5	3.32										
225.0	3.32										
247.5	3.26										
270.0	3.21										
292.5	3.21										
315.0	3.26										
337.5	3.21										
360.0	3.15										