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NATA

LumCAT: 3-2326-M
Luminaire: 92.70.131.00
Report No: NATA0100
Test No: GC2019123020
LampCAT: LUMINUS CXM-14-AC40
Lamp flux(lm): 2608.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 34.7100
Current(A): 0.6000
Power (W): 20.8600
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 2296.13
Efficiency(%): 88.04%
Lumens(lm)/Power(W): 110.07
Central intensity(cd): 4863.093
Maximum intensity(cd): 4863.093
Angle of maximum intensity: $C=0.0 \gamma=0.0$
Beam Angle(50%Imax): [C0/180]Total=35.7
[C90/270]Total=35.7
Field angle(10%Imax): [C0/180]Total=70.8
[C90/270]Total=70.8
Maximum s/h(1/2): C0_180=0.59 C90_270=0.59
Maximum s/h(1/4): C0_180=0.60 C90_270=0.60
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 88.04%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.485%

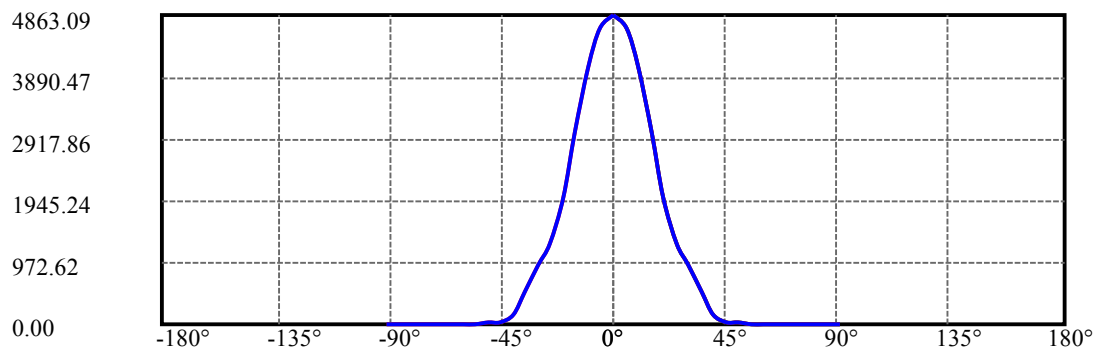
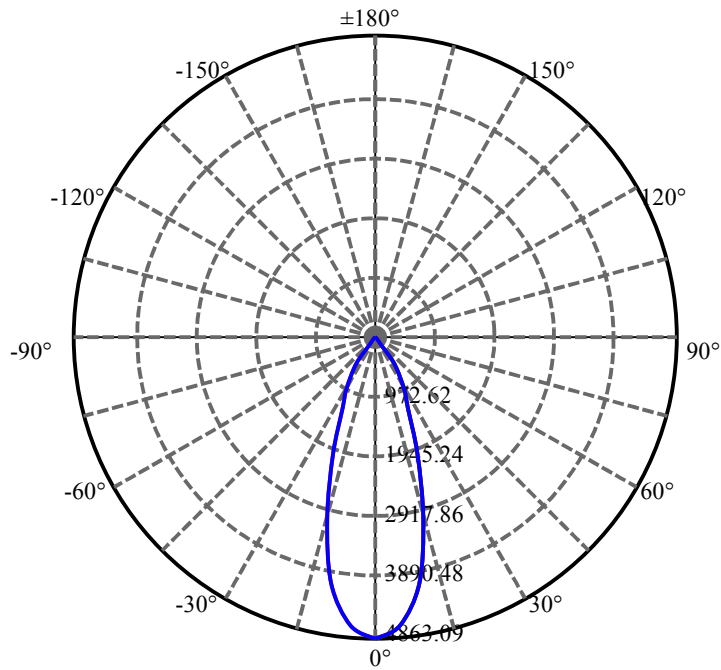
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4863.094	0.000	0	.000%	.000%
5.0	4652.930	113.761	113.761	4.362%	4.954%
10.0	4035.094	310.798	424.559	11.917%	18.490%
15.0	3014.508	418.178	842.737	16.034%	36.702%
20.0	1995.680	412.910	1255.647	15.832%	54.685%
25.0	1280.883	343.651	1599.298	13.177%	69.652%
30.0	948.755	282.162	1881.46	10.819%	81.940%
35.0	517.331	215.891	2097.352	8.278%	91.343%
40.0	144.548	110.430	2207.781	4.234%	96.152%
45.0	25.460	31.478	2239.26	1.207%	97.523%
50.0	17.831	8.748	2248.007	.335%	97.904%
55.0	14.491	7.028	2255.035	.269%	98.210%
60.0	12.825	6.314	2261.35	.242%	98.485%
65.0	11.827	5.993	2267.342	.230%	98.746%
70.0	11.229	5.838	2273.18	.224%	99.000%
75.0	10.835	5.767	2278.947	.221%	99.252%
80.0	10.603	5.736	2284.684	.220%	99.501%
85.0	10.477	5.728	2290.411	.220%	99.751%
90.0	10.413	5.720	2296.131	.219%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1881.46	72.14%	81.94%
0-40	2207.78	84.65%	96.15%
0-60	2261.35	86.71%	98.49%
0-90	2290.41	87.82%	99.75%
0-120	2290.41	87.82%	99.75%
0-180	2296.13	88.04%	100.00%
60-90	35.38	1.36%	1.54%
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%
0-29.21	1836.91	70.43%	80.00%

ZONAL LUMEN SUMMARY

0-10	424.56
10-20	831.09
20-30	625.81
30-40	326.32
40-50	40.23
50-60	13.34
60-70	11.83
70-80	11.50
80-90	5.73
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: —————

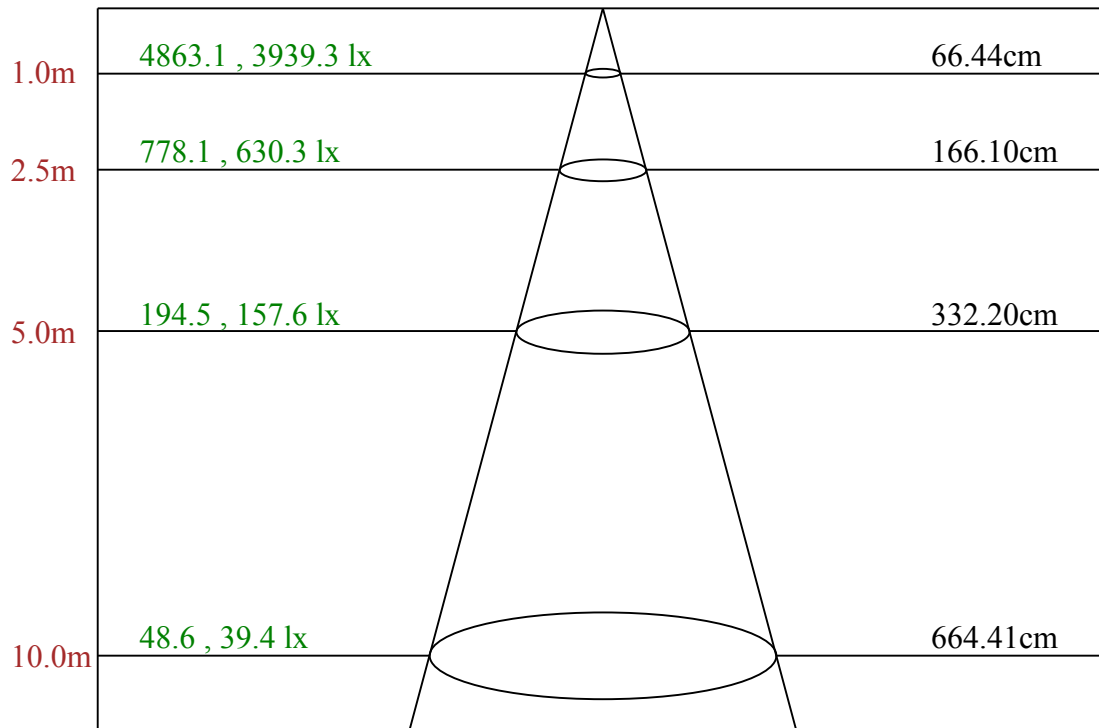
C90/C270: —————

Field angle(10%Imax):C0/180Left:35.4 Right:35.4

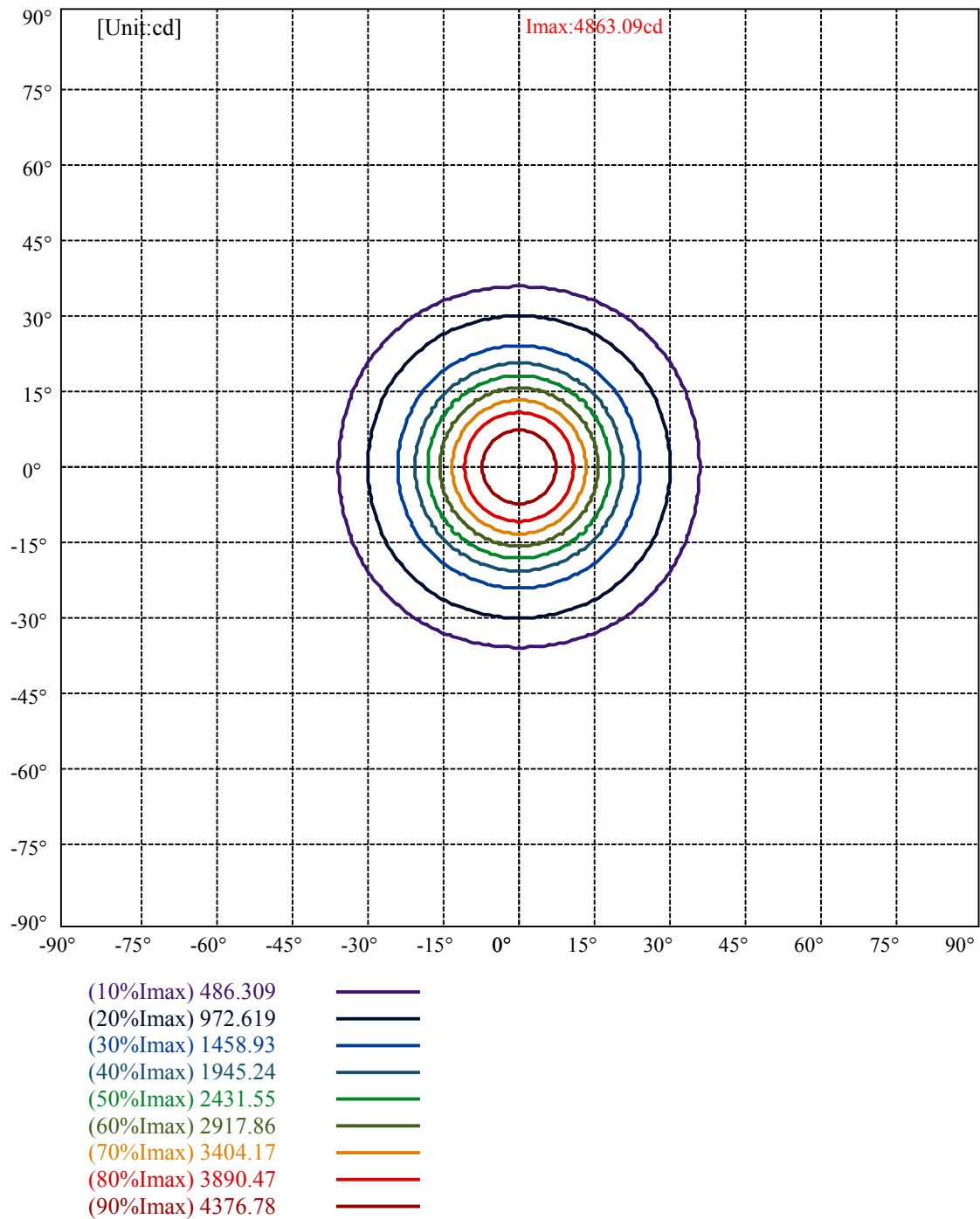
:C90/270Left:35.4 Right:35.4

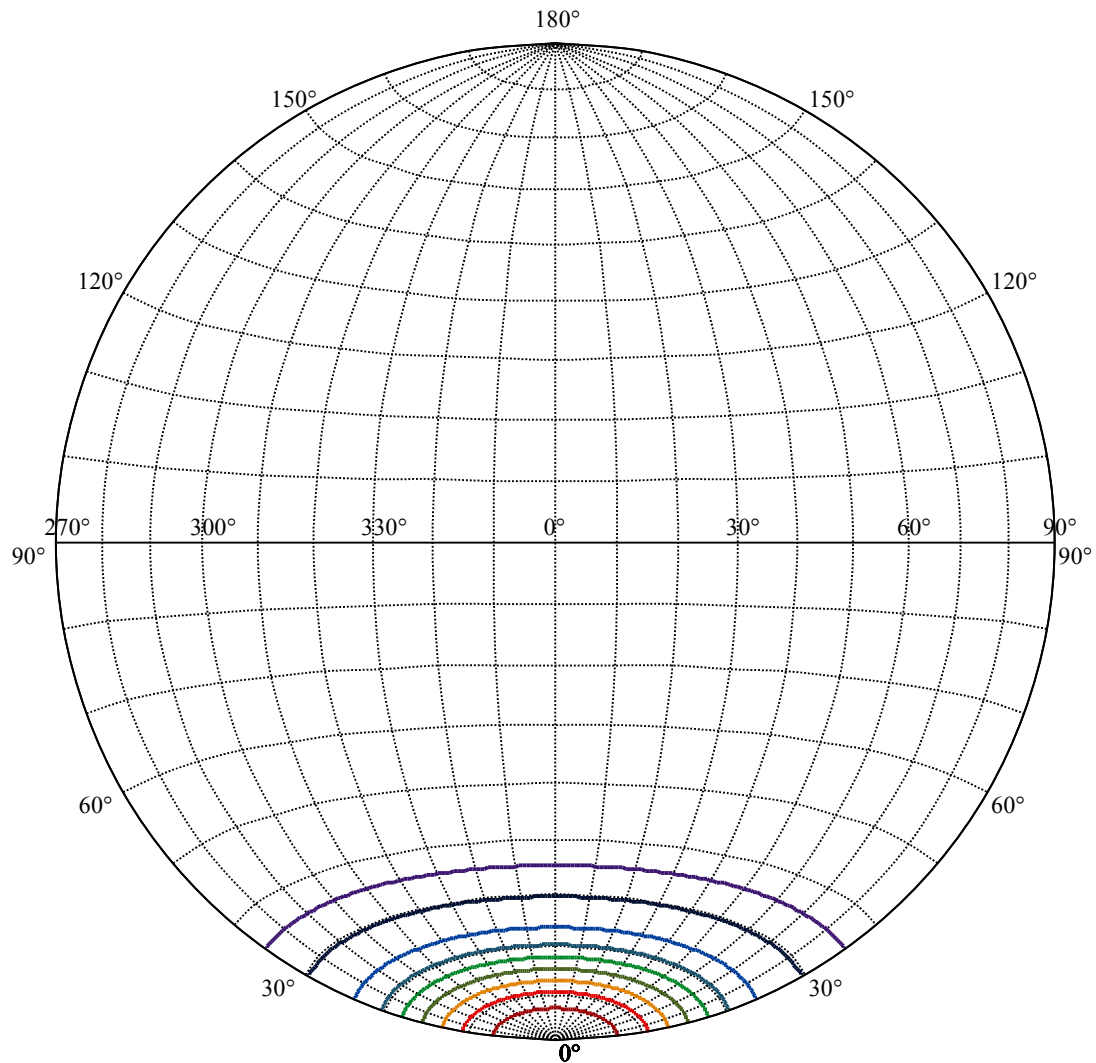
Beam Angle(50%Imax):C0/180Left:17.9 Right:17.9

:C90/270Left:17.9 Right:17.9



Max , Ave Beam angle of C0 plane 36.75





House

[Unit:cd]

Road

Imax:4863.09

(10%Imax) 486.309

(20%Imax) 972.619

(30%Imax) 1458.93

(40%Imax) 1945.24

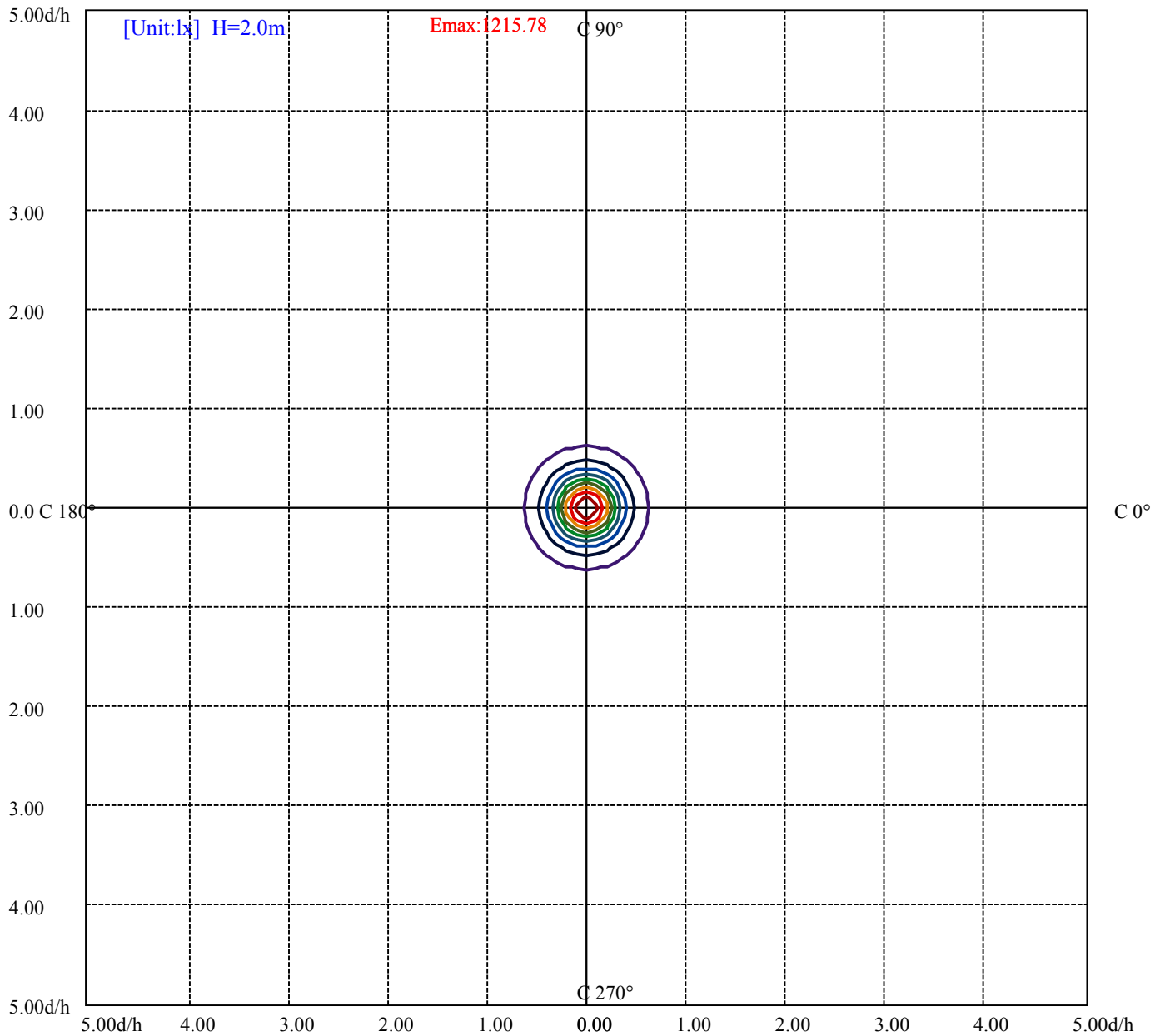
(50%Imax) 2431.55

(60%Imax) 2917.86

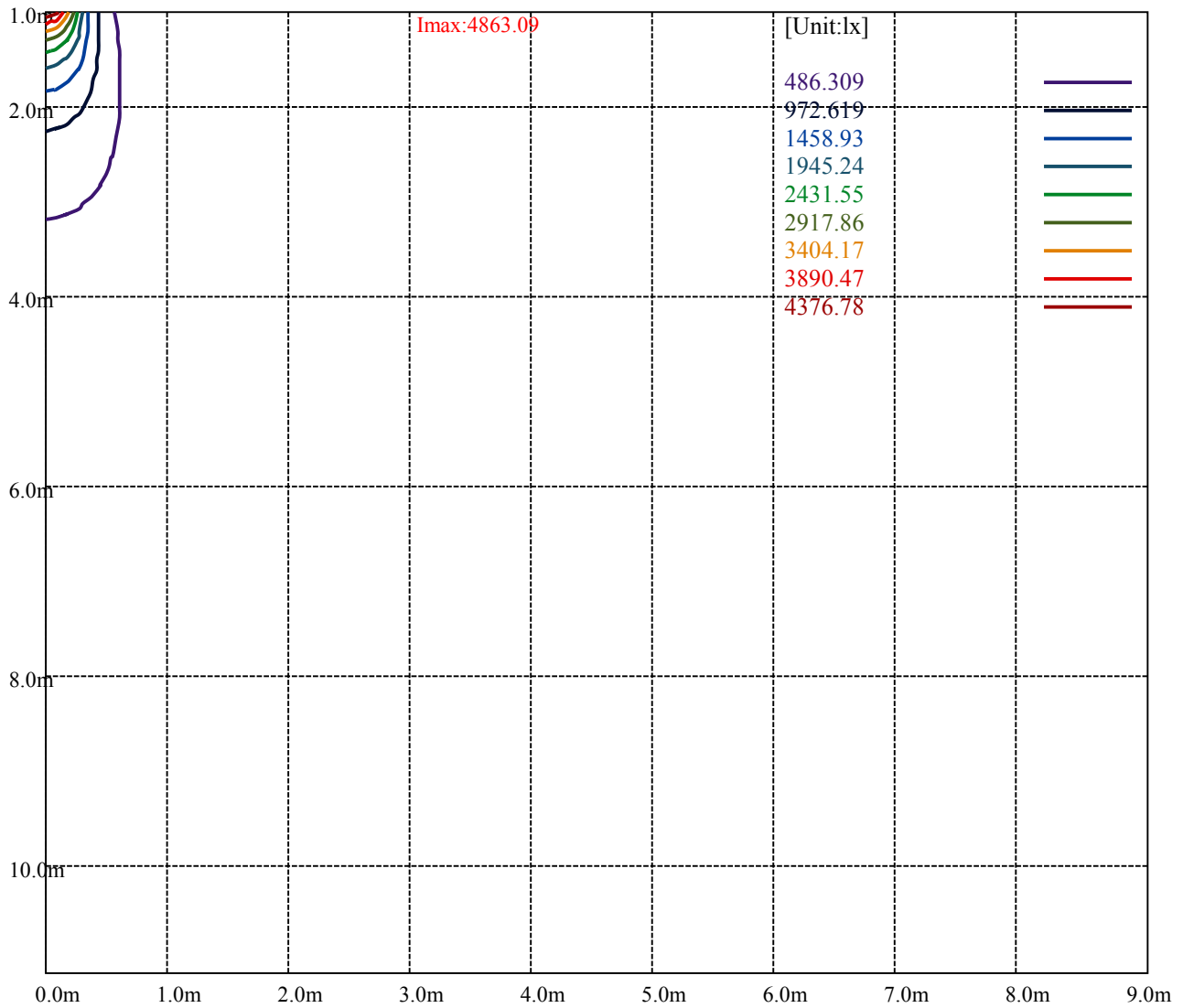
(70%Imax) 3404.17

(80%Imax) 3890.47

(90%Imax) 4376.78



(10%E _{max}) 121.5772	—
(20%E _{max}) 243.1543	—
(30%E _{max}) 364.7325	—
(40%E _{max}) 486.3075	—
(50%E _{max}) 607.885	—
(60%E _{max}) 729.4625	—
(70%E _{max}) 851.04	—
(80%E _{max}) 972.6175	—
(90%E _{max}) 1094.195	—



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

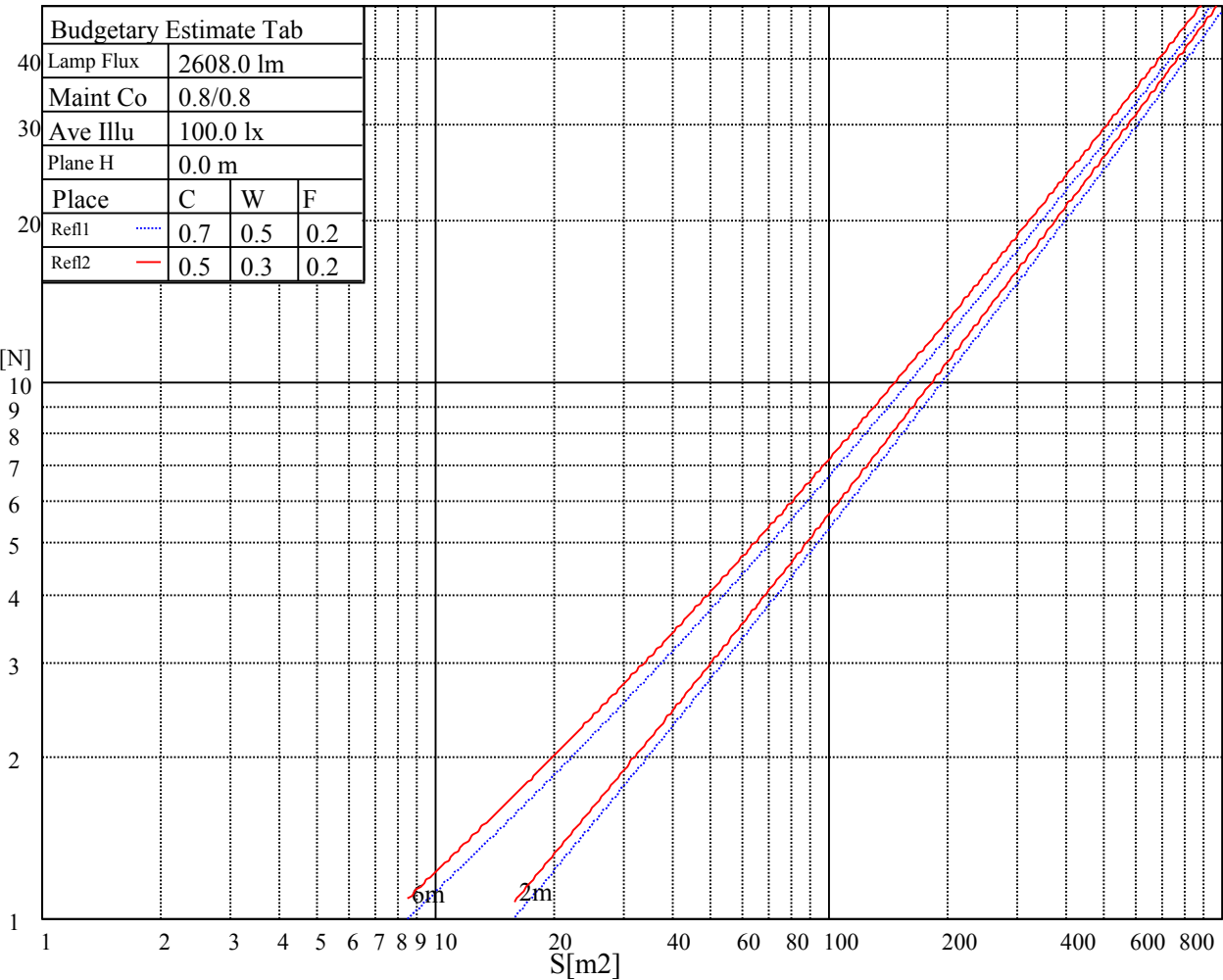
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

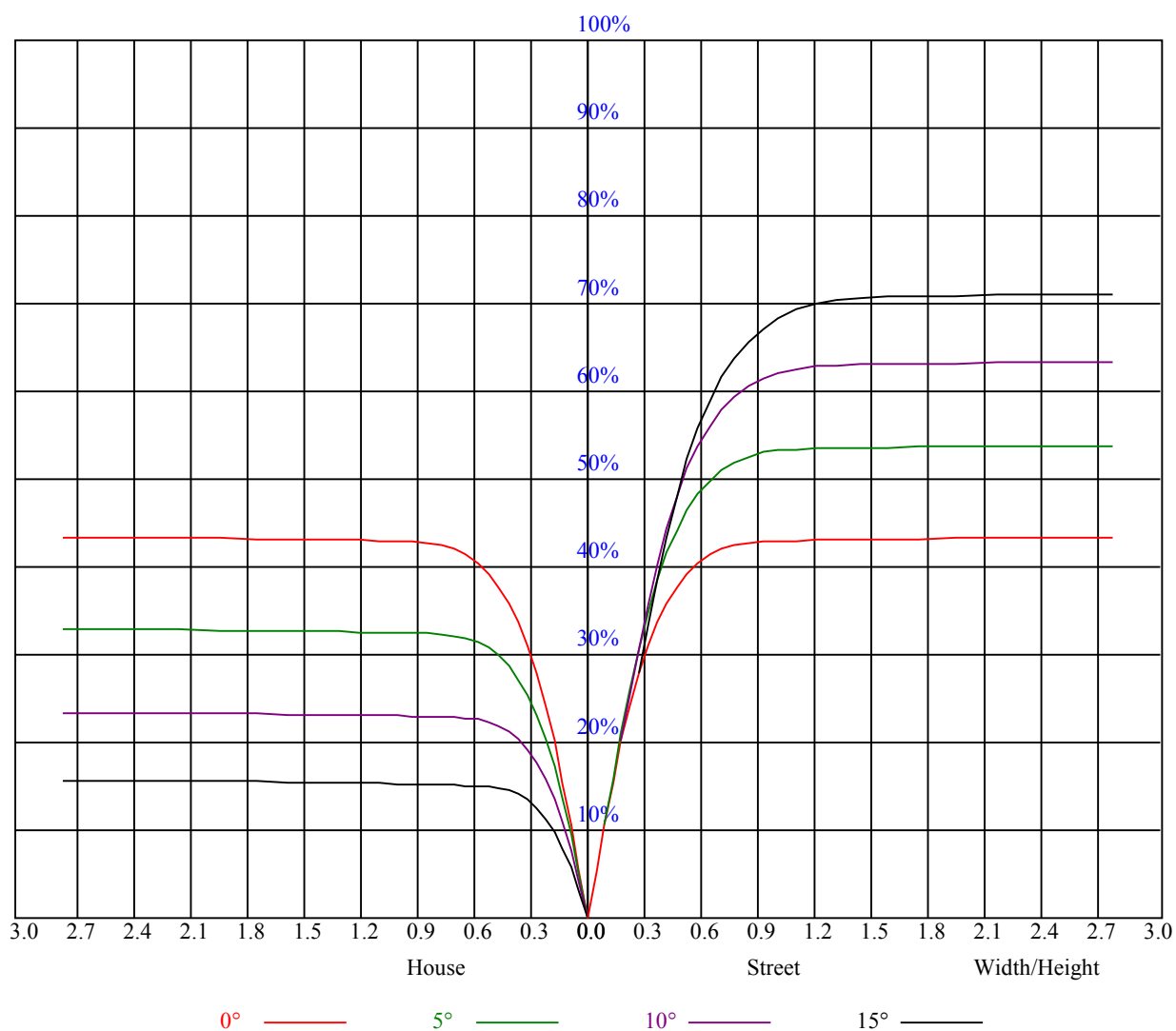
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.05	1.05	1.05	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.88
1	0.98	0.96	0.94	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.84	0.83
2	0.92	0.89	0.86	0.90	0.87	0.85	0.88	0.85	0.83	0.85	0.83	0.81	0.83	0.81	0.80	0.78
3	0.87	0.83	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.81	0.79	0.76	0.79	0.77	0.75	0.74
4	0.82	0.78	0.74	0.81	0.77	0.74	0.79	0.76	0.73	0.77	0.74	0.72	0.76	0.73	0.71	0.70
5	0.78	0.73	0.70	0.77	0.73	0.69	0.75	0.72	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.66
6	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.63
7	0.70	0.66	0.62	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.60
8	0.67	0.62	0.59	0.67	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.58	0.57
9	0.64	0.59	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.59	0.56	0.61	0.58	0.56	0.55
10	0.61	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.54	0.60	0.56	0.53	0.59	0.56	0.53	0.52



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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	4862.81	4488.75	3756.94	2649.38	1665.00	1141.88	866.81	351.56	41.06		
45.0	4882.50	4605.19	3849.19	2728.13	1688.63	1135.13	862.31	352.69	41.68		
90.0	4861.13	4617.00	3913.88	2788.88	1840.50	1118.19	888.64	415.41	44.49		
135.0	4845.94	4795.88	4317.75	3438.00	2325.94	1454.06	1040.06	689.06	294.75		
180.0	4862.81	4776.19	4282.31	3395.81	2300.63	1456.31	1048.05	713.53	214.65		
225.0	4882.50	4756.50	4240.69	3332.25	2264.06	1429.31	1032.58	671.51	178.59		
270.0	4861.13	4719.38	4181.06	3187.13	2199.94	1398.94	1000.69	619.31	303.19		
315.0	4845.94	4464.56	3738.94	2596.50	1680.75	1113.24	850.89	325.58	37.97		
360.0	4862.81	4488.75	3756.94	2649.38	1665.00	1141.88	866.81	351.56	41.06		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	21.21	16.31	13.67	12.38	11.53	10.97	10.69	10.46	10.35		
45.0	21.09	16.43	13.84	12.49	11.70	11.19	10.80	10.58	10.46		
90.0	21.94	17.04	14.06	12.60	11.70	11.19	10.86	10.63	10.52		
135.0	30.32	19.29	15.24	13.28	12.09	11.36	10.91	10.63	10.46		
180.0	33.13	20.19	15.69	13.50	12.15	11.42	10.86	10.58	10.41		
225.0	28.74	19.13	15.13	13.05	12.04	11.36	10.97	10.69	10.58		
270.0	26.72	18.28	14.68	12.99	11.93	11.31	10.91	10.74	10.58		
315.0	20.53	15.98	13.61	12.32	11.48	11.03	10.69	10.52	10.46		
360.0	21.21	16.31	13.67	12.38	11.53	10.97	10.69	10.46	10.35		
C/γ(°)	90.0										
0.0	10.29										
45.0	10.46										
90.0	10.46										
135.0	10.41										
180.0	10.35										
225.0	10.46										
270.0	10.46										
315.0	10.41										
360.0	10.29										