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NATA

LumCAT: 2-2010-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): 2266.91
Efficiency(%): 86.92%
Lumens(lm)/Power(W): 108.67
Central intensity(cd): 2126.953
Maximum intensity(cd): 2145.234
Angle of maximum intensity: C=0.0 γ =10.0
Beam Angle(50%Imax): [C0/180]Total=65.8
[C90/270]Total=65.8
Field angle(10%Imax): [C0/180]Total=85.1
[C90/270]Total=85.1
Maximum s/h(1/2): C0_180=1.05 C90_270=1.05
Maximum s/h(1/4): C0_180=0.97 C90_270=0.97
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 86.92%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.523%

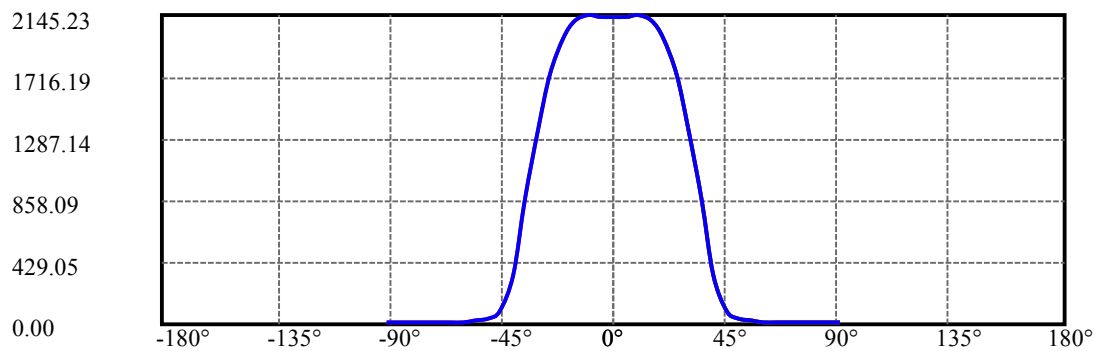
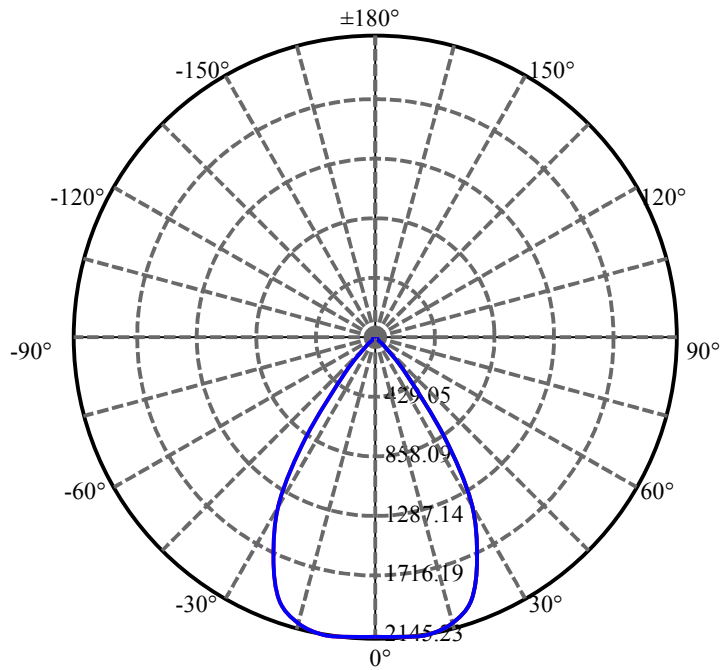
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2126.953	0.000	0	.000%	.000%
5.0	2137.711	50.983	50.983	1.955%	2.249%
10.0	2145.234	153.214	204.197	5.875%	9.008%
15.0	2105.156	252.130	456.328	9.668%	20.130%
20.0	1989.844	337.486	793.813	12.940%	35.017%
25.0	1728.070	389.941	1183.754	14.952%	52.219%
30.0	1356.427	390.346	1574.099	14.967%	69.438%
35.0	865.695	327.223	1901.322	12.547%	83.873%
40.0	345.459	202.072	2103.394	7.748%	92.787%
45.0	90.443	80.711	2184.105	3.095%	96.347%
50.0	41.548	26.671	2210.776	1.023%	97.524%
55.0	22.570	13.941	2224.717	.535%	98.139%
60.0	15.061	8.698	2233.415	.334%	98.523%
65.0	11.510	6.459	2239.875	.248%	98.808%
70.0	10.216	5.501	2245.376	.211%	99.050%
75.0	10.062	5.300	2250.677	.203%	99.284%
80.0	9.998	5.368	2256.044	.206%	99.521%
85.0	9.956	5.422	2261.466	.208%	99.760%
90.0	9.914	5.441	2266.907	.209%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1574.10	60.36%	69.44%
0-40	2103.39	80.65%	92.79%
0-60	2233.42	85.64%	98.52%
0-90	2261.47	86.71%	99.76%
0-120	2261.47	86.71%	99.76%
0-180	2266.91	86.92%	100.00%
60-90	36.75	1.41%	1.62%
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%
0-33.66	1813.53	69.54%	80.00%

ZONAL LUMEN SUMMARY

0-10	204.20
10-20	589.62
20-30	780.29
30-40	529.29
40-50	107.38
50-60	22.64
60-70	11.96
70-80	10.67
80-90	5.42
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:

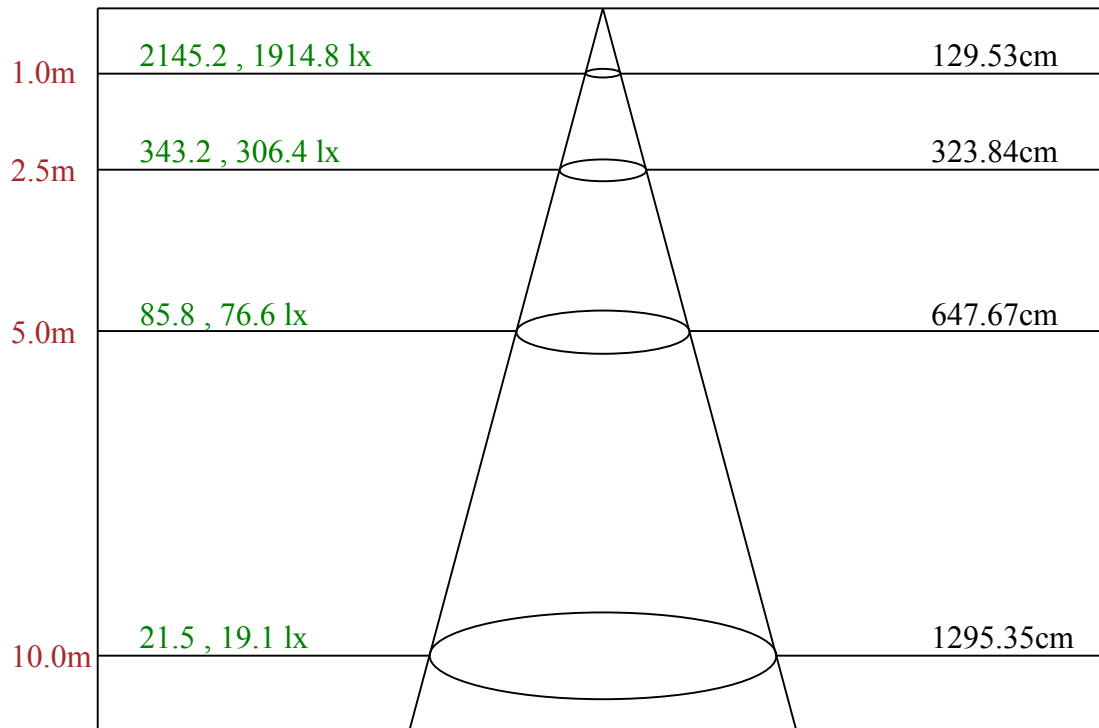
C90/C270:

Field angle(10%Imax):C0/180Left:52.6 Right:32.6

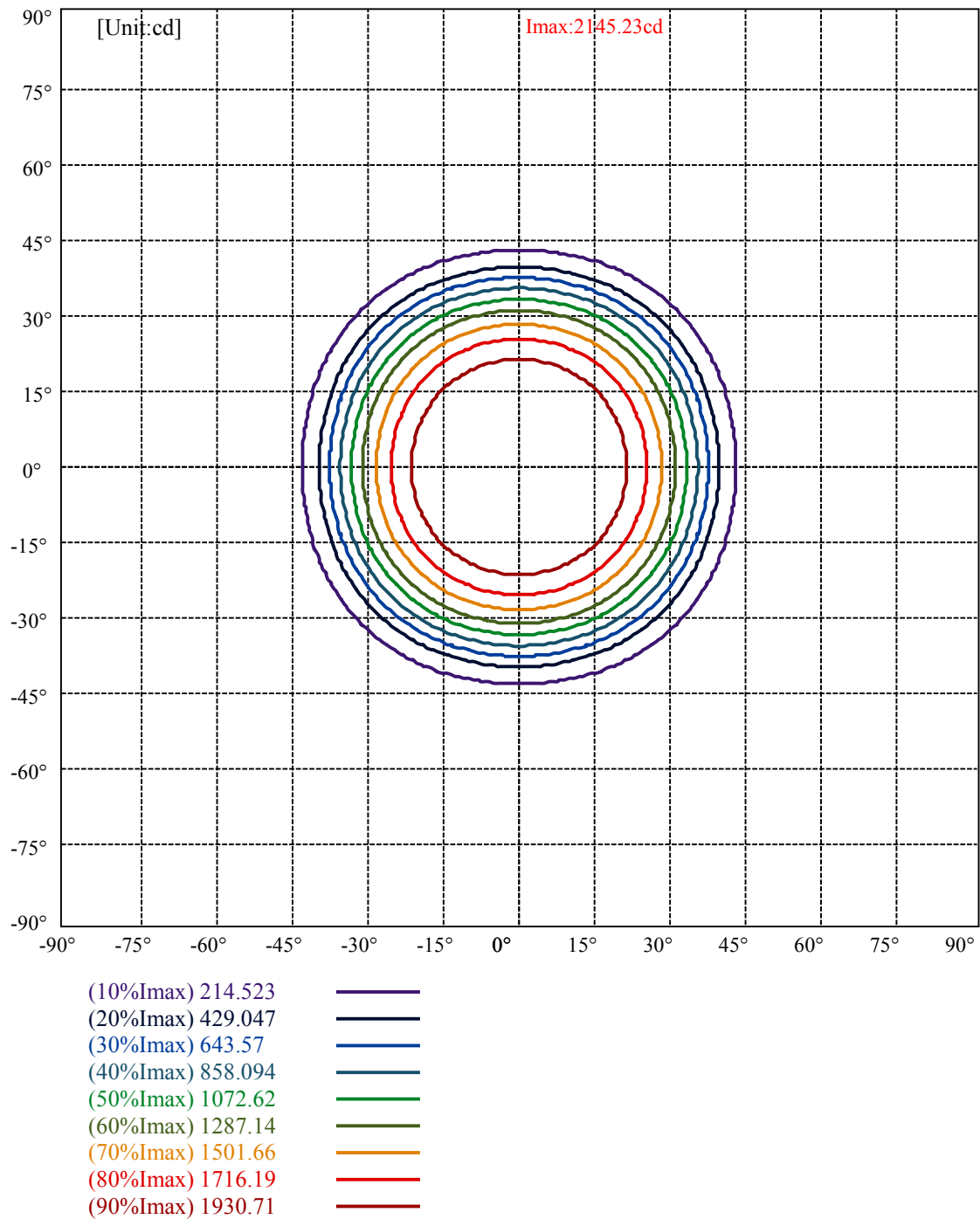
:C90/270Left:52.6 Right:32.6

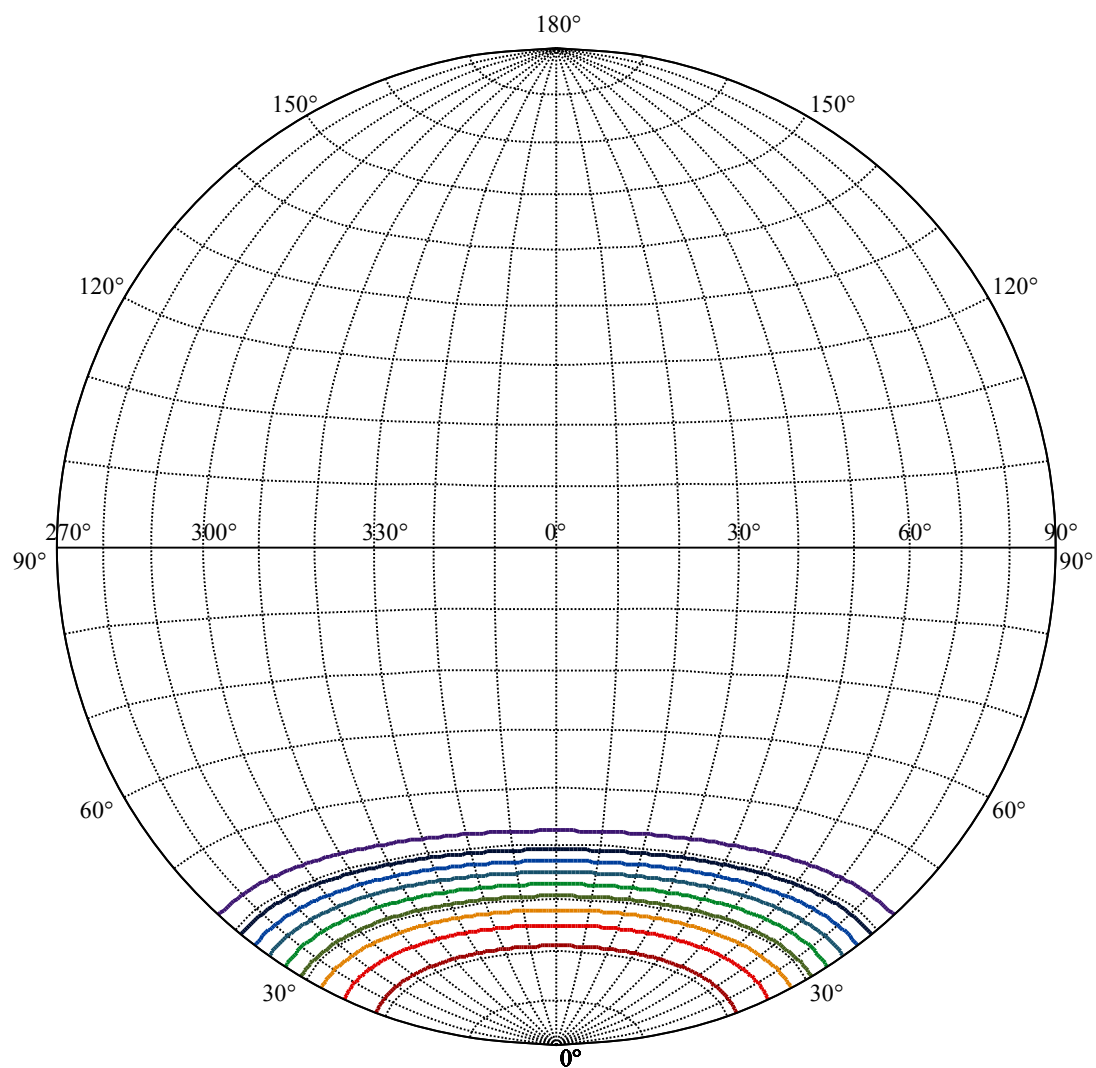
Beam Angle(50%Imax):C0/180Left:42.9 Right:22.9

:C90/270Left:42.9 Right:22.9



Max , Ave Beam angle of C0 plane 65.86



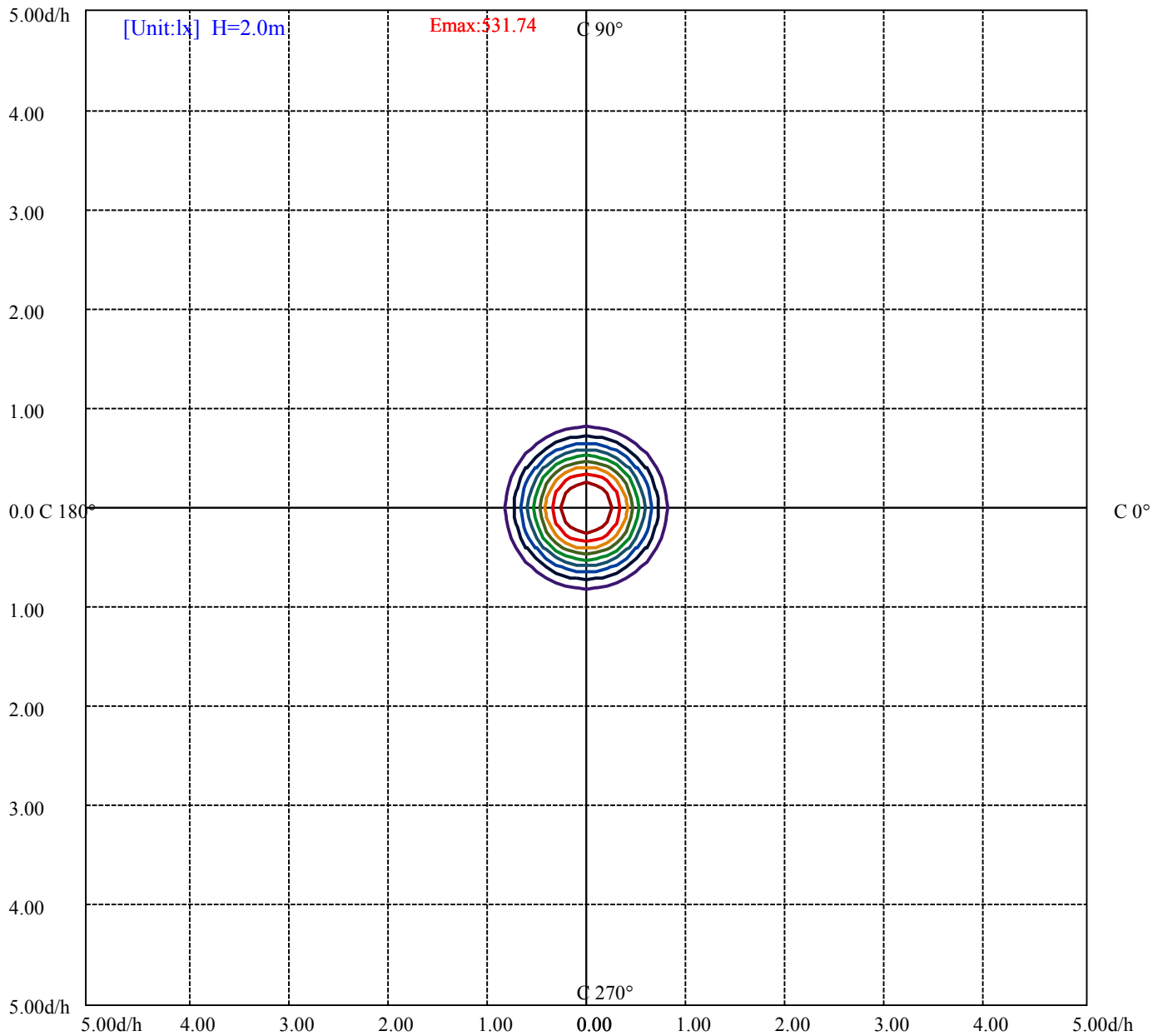


House

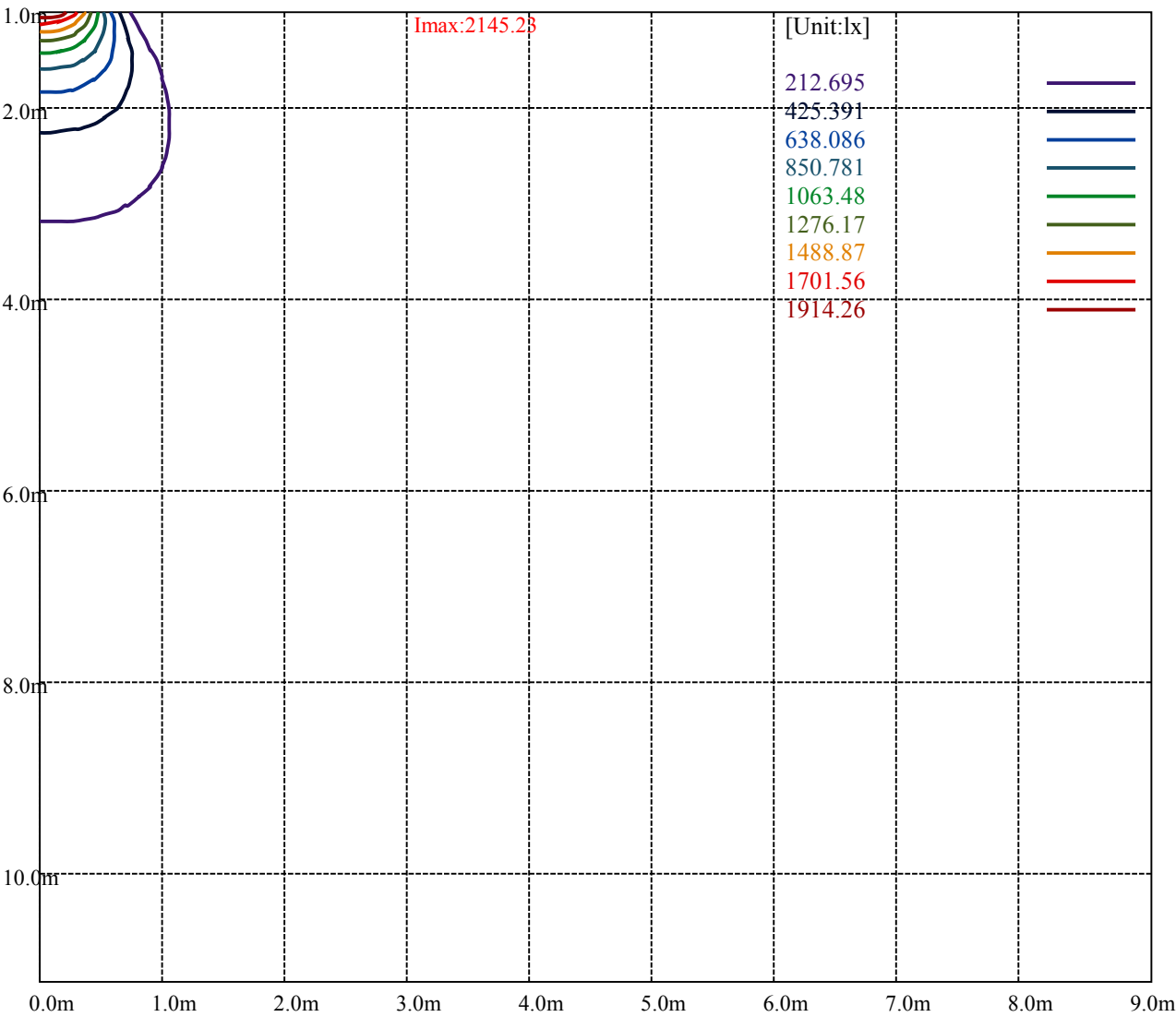
[Unit:cd]

Road

I_{max}:2145.23(10%I_{max}) 214.523(20%I_{max}) 429.047(30%I_{max}) 643.57(40%I_{max}) 858.094(50%I_{max}) 1072.62(60%I_{max}) 1287.14(70%I_{max}) 1501.66(80%I_{max}) 1716.19(90%I_{max}) 1930.71



(10%E _{max}) 53.17375	—
(20%E _{max}) 106.3477	—
(30%E _{max}) 159.5215	—
(40%E _{max}) 212.6953	—
(50%E _{max}) 265.87	—
(60%E _{max}) 319.0425	—
(70%E _{max}) 372.2175	—
(80%E _{max}) 425.39	—
(90%E _{max}) 478.565	—



Luminance Table

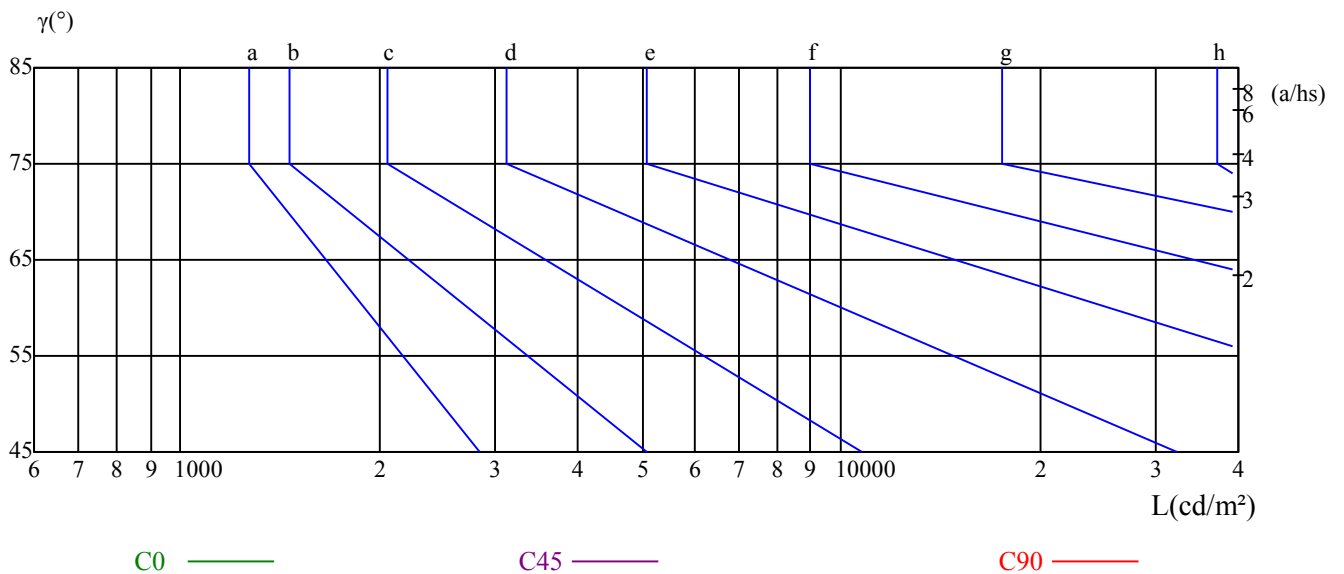
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

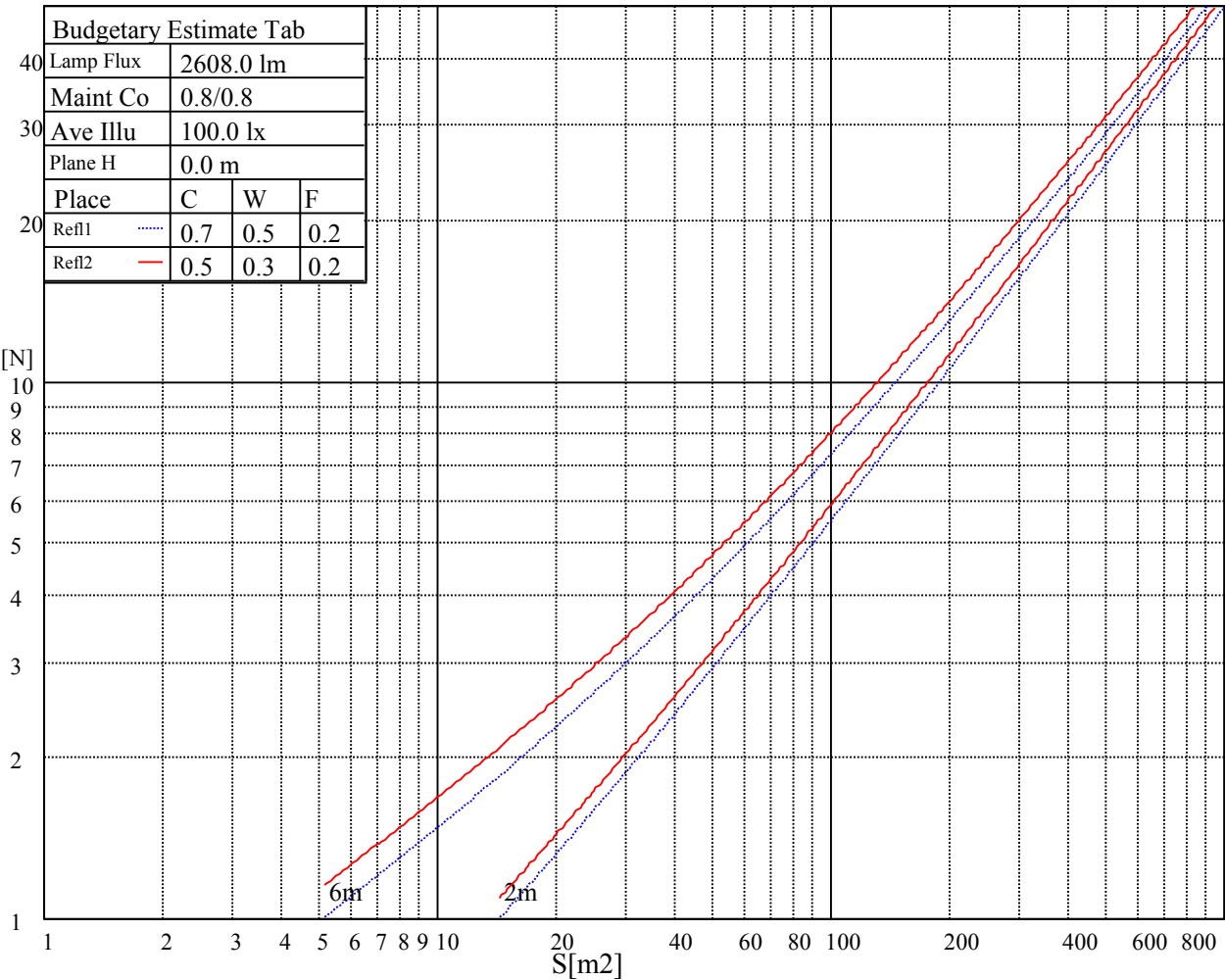
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

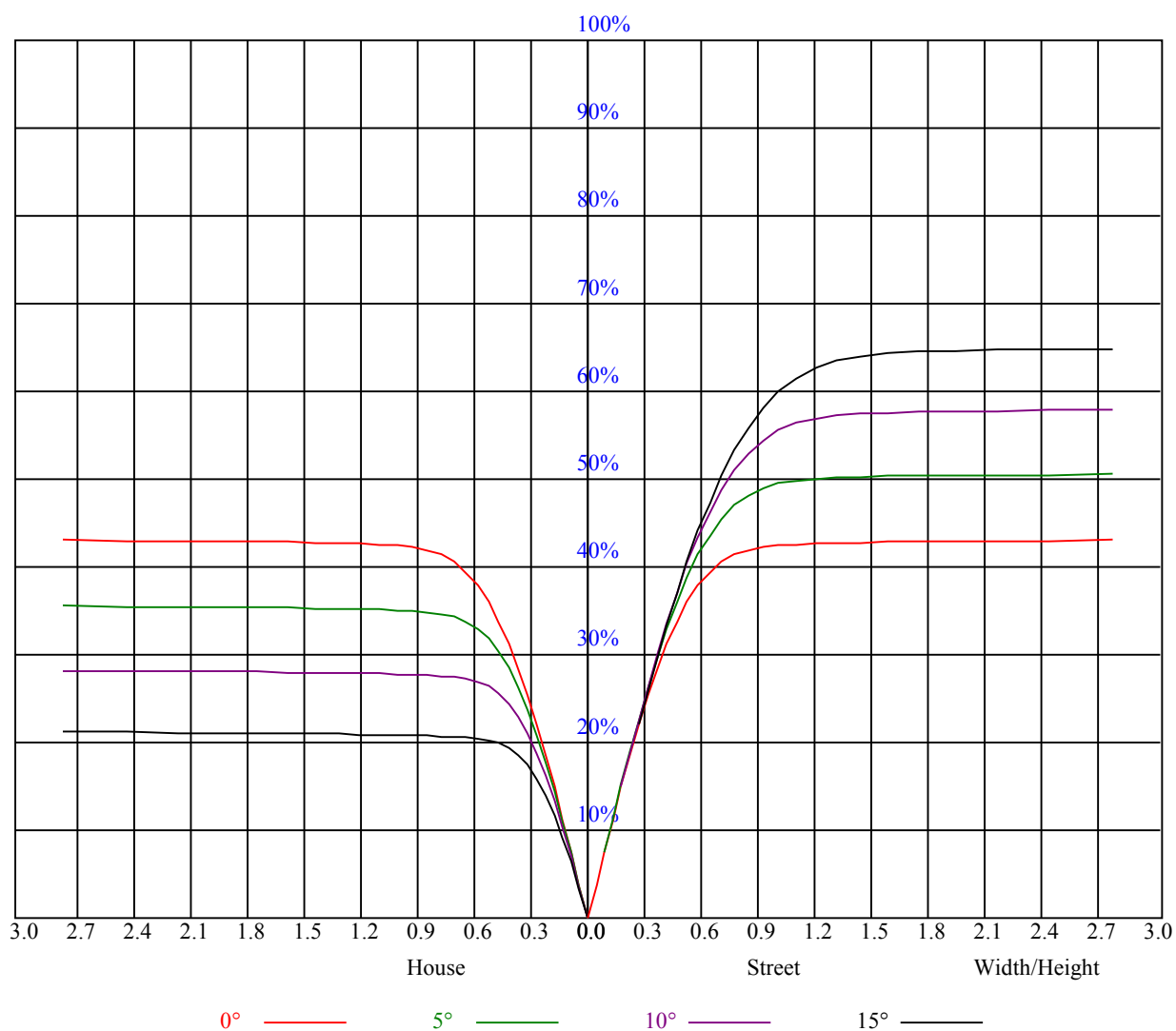
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





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	1.03	1.03	1.03	1.01	1.01	1.01	0.97	0.97	0.97	0.92	0.92	0.92	0.89	0.89	0.89	0.87
1	0.96	0.94	0.92	0.94	0.92	0.90	0.90	0.89	0.87	0.87	0.86	0.85	0.84	0.83	0.82	0.81
2	0.89	0.85	0.82	0.87	0.84	0.81	0.85	0.82	0.80	0.82	0.80	0.78	0.80	0.78	0.76	0.75
3	0.83	0.78	0.75	0.82	0.77	0.74	0.79	0.76	0.73	0.77	0.74	0.72	0.75	0.73	0.71	0.69
4	0.77	0.72	0.69	0.76	0.72	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.71	0.68	0.66	0.64
5	0.72	0.67	0.63	0.71	0.66	0.63	0.70	0.66	0.62	0.68	0.65	0.62	0.67	0.64	0.61	0.60
6	0.68	0.62	0.58	0.67	0.62	0.58	0.66	0.61	0.58	0.64	0.60	0.57	0.63	0.60	0.57	0.56
7	0.63	0.58	0.54	0.63	0.58	0.54	0.62	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.53	0.52
8	0.60	0.54	0.51	0.59	0.54	0.51	0.58	0.54	0.50	0.57	0.53	0.50	0.56	0.53	0.50	0.49
9	0.56	0.51	0.47	0.56	0.51	0.47	0.55	0.50	0.47	0.54	0.50	0.47	0.53	0.50	0.47	0.46
10	0.53	0.48	0.44	0.53	0.48	0.44	0.52	0.47	0.44	0.51	0.47	0.44	0.51	0.47	0.44	0.43



NATA 2-2010-M

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	2131.31	2148.75	2176.88	2168.44	2098.69	1905.19	1551.38	1140.75	573.75		
45.0	2121.19	2130.19	2153.25	2143.69	2068.31	1865.81	1556.44	1083.94	528.75		
90.0	2122.88	2126.25	2127.38	2085.75	1972.13	1705.50	1364.06	847.52	301.22		
135.0	2132.44	2126.81	2122.31	2067.75	1945.13	1672.31	1316.25	791.44	308.81		
180.0	2131.31	2134.13	2116.13	2035.13	1872.00	1546.31	1100.70	617.23	156.66		
225.0	2121.19	2133.00	2124.00	2055.94	1897.88	1591.31	1121.96	604.13	183.66		
270.0	2122.88	2143.13	2159.44	2129.63	2014.31	1749.38	1402.31	900.56	339.19		
315.0	2132.44	2159.44	2182.50	2154.94	2050.31	1788.75	1438.31	939.99	371.64		
360.0	2131.31	2148.75	2176.88	2168.44	2098.69	1905.19	1551.38	1140.75	573.75		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	127.29	56.31	28.24	17.72	12.71	10.52	10.07	10.01	9.96		
45.0	120.15	51.58	26.55	17.10	12.77	10.58	10.13	9.96	9.90		
90.0	84.66	39.43	21.71	15.08	11.48	10.24	10.13	10.07	10.01		
135.0	77.79	36.51	21.32	14.23	11.08	10.13	10.07	10.01	9.96		
180.0	58.56	30.32	17.83	12.88	10.41	10.01	10.01	9.96	9.96		
225.0	65.59	32.01	18.96	13.28	10.58	9.96	9.96	9.96	9.84		
270.0	95.68	42.47	22.61	15.19	11.42	10.13	10.07	10.01	10.01		
315.0	93.83	43.76	23.34	15.02	11.64	10.18	10.07	10.01	10.01		
360.0	127.29	56.31	28.24	17.72	12.71	10.52	10.07	10.01	9.96		
C/ γ (°)	90.0										
0.0	9.90										
45.0	9.84										
90.0	9.90										
135.0	9.96										
180.0	9.96										
225.0	9.84										
270.0	9.96										
315.0	9.96										
360.0	9.90										