
Nata

LumCAT: 3-1945-M	
Luminaire: BJB 47.319.2021	
Report No: GC2017062003	Voltage(V): 218.3000
Test No: NT-0010	Current(A): 0.1030
LampCAT: CITIZEN CLU036	Power (W): 20.5000
Lamp flux(lm): 2279.0	PF: 0.9070
Number of Lamps: 1	Ballast type: DC
Length(mm): 86	Width(mm): 86
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2063.74
Efficiency(%): 90.55%
Lumens(lm)/Power(W): 100.67
Central intensity(cd): 2768.511
Maximum intensity(cd): 2768.511
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=55.5
[C90/270]Total=55.5
Field angle(10%Imax): [C0/180]Total=73.7
[C90/270]Total=73.7
Maximum s/h(1/2): C0_180=0.89 C90_270=0.89
Maximum s/h(1/4): C0_180=0.83 C90_270=0.83
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.55%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.685%

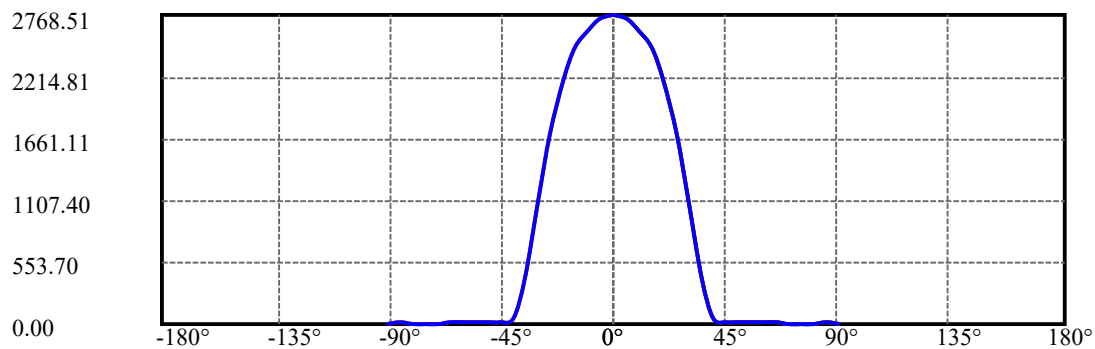
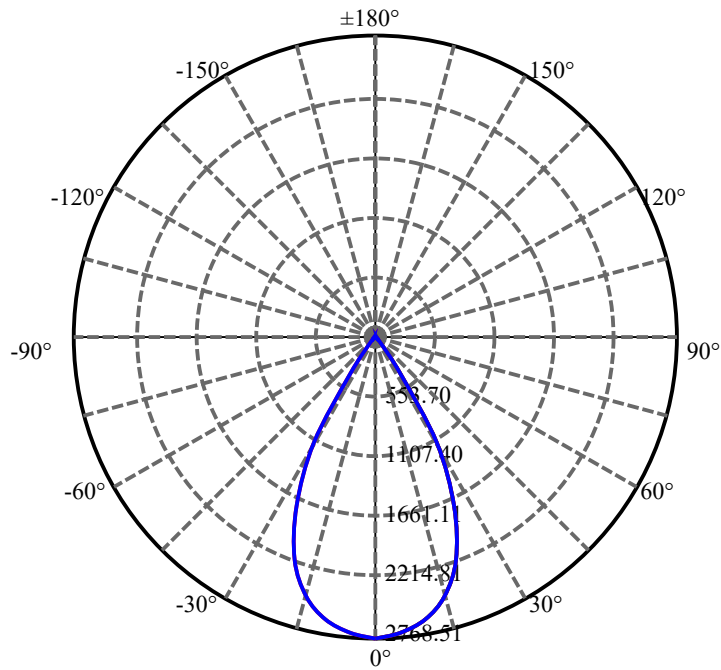
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2768.511	0.000	0	.000%	.000%
5.0	2727.563	65.704	65.704	2.883%	3.184%
10.0	2633.485	191.782	257.486	8.415%	12.477%
15.0	2469.348	302.697	560.182	13.282%	27.144%
20.0	2180.027	383.174	943.356	16.813%	45.711%
25.0	1709.639	407.954	1351.31	17.901%	65.479%
30.0	1117.321	357.754	1709.064	15.698%	82.814%
35.0	404.665	224.123	1933.188	9.834%	93.674%
40.0	54.637	76.631	2009.818	3.362%	97.387%
45.0	14.473	12.796	2022.615	.561%	98.007%
50.0	10.874	5.122	2027.736	.225%	98.255%
55.0	9.759	4.486	2032.222	.197%	98.473%
60.0	9.194	4.381	2036.603	.192%	98.685%
65.0	8.823	4.380	2040.983	.192%	98.897%
70.0	8.582	4.407	2045.39	.193%	99.111%
75.0	8.541	4.476	2049.866	.196%	99.328%
80.0	8.582	4.582	2054.448	.201%	99.550%
85.0	8.603	4.669	2059.117	.205%	99.776%
90.0	8.293	4.626	2063.743	.203%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1709.06	74.99%	82.81%
0-40	2009.82	88.19%	97.39%
0-60	2036.60	89.36%	98.68%
0-90	2059.12	90.35%	99.78%
0-120	2059.12	90.35%	99.78%
0-180	2063.74	90.55%	100.00%
60-90	26.89	1.18%	1.30%
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%
0-29.19	1651.00	72.44%	80.00%

ZONAL LUMEN SUMMARY

0-10	257.49
10-20	685.87
20-30	765.71
30-40	300.75
40-50	17.92
50-60	8.87
60-70	8.79
70-80	9.06
80-90	4.67
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:

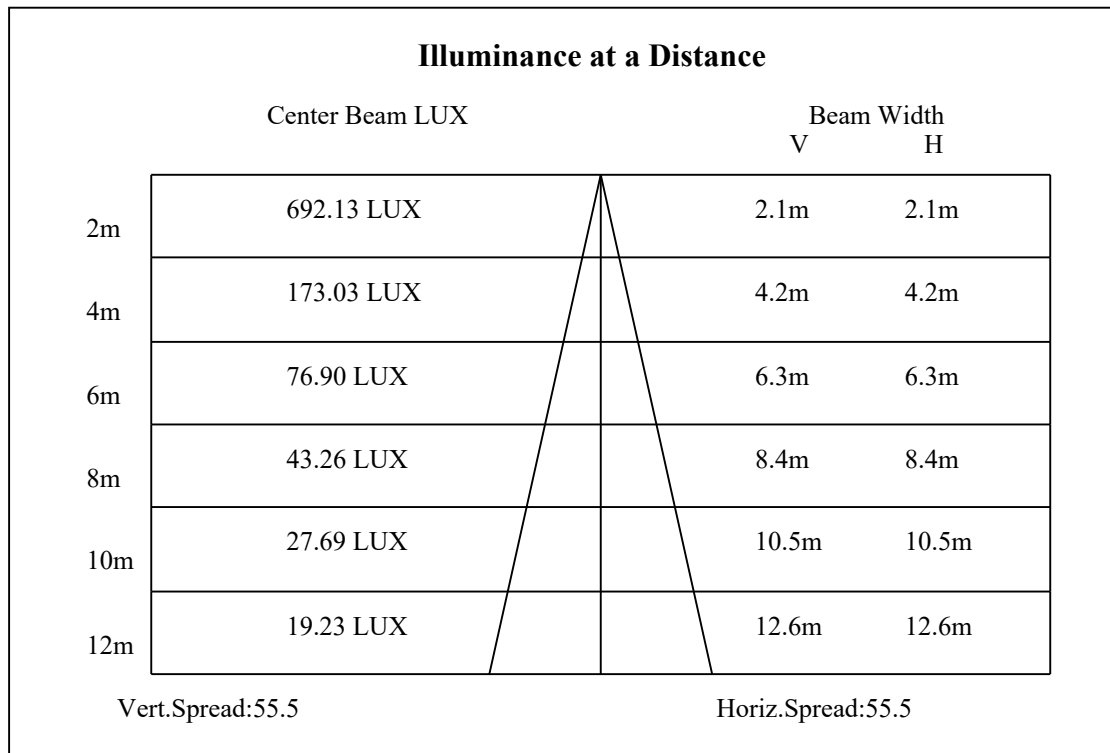
C90/C270:

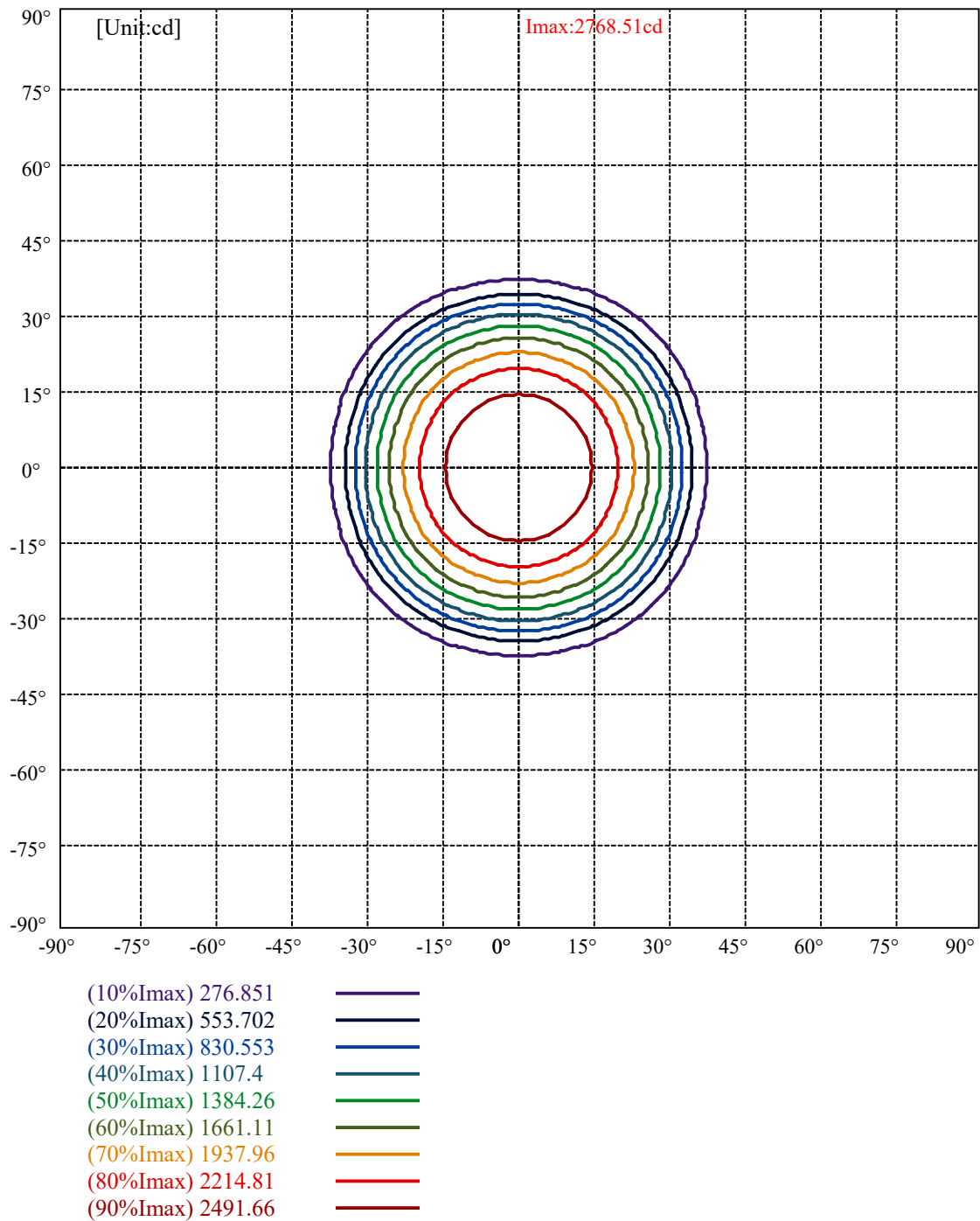
Field angle(10%Imax):C0/180Left:36.8 Right:36.8

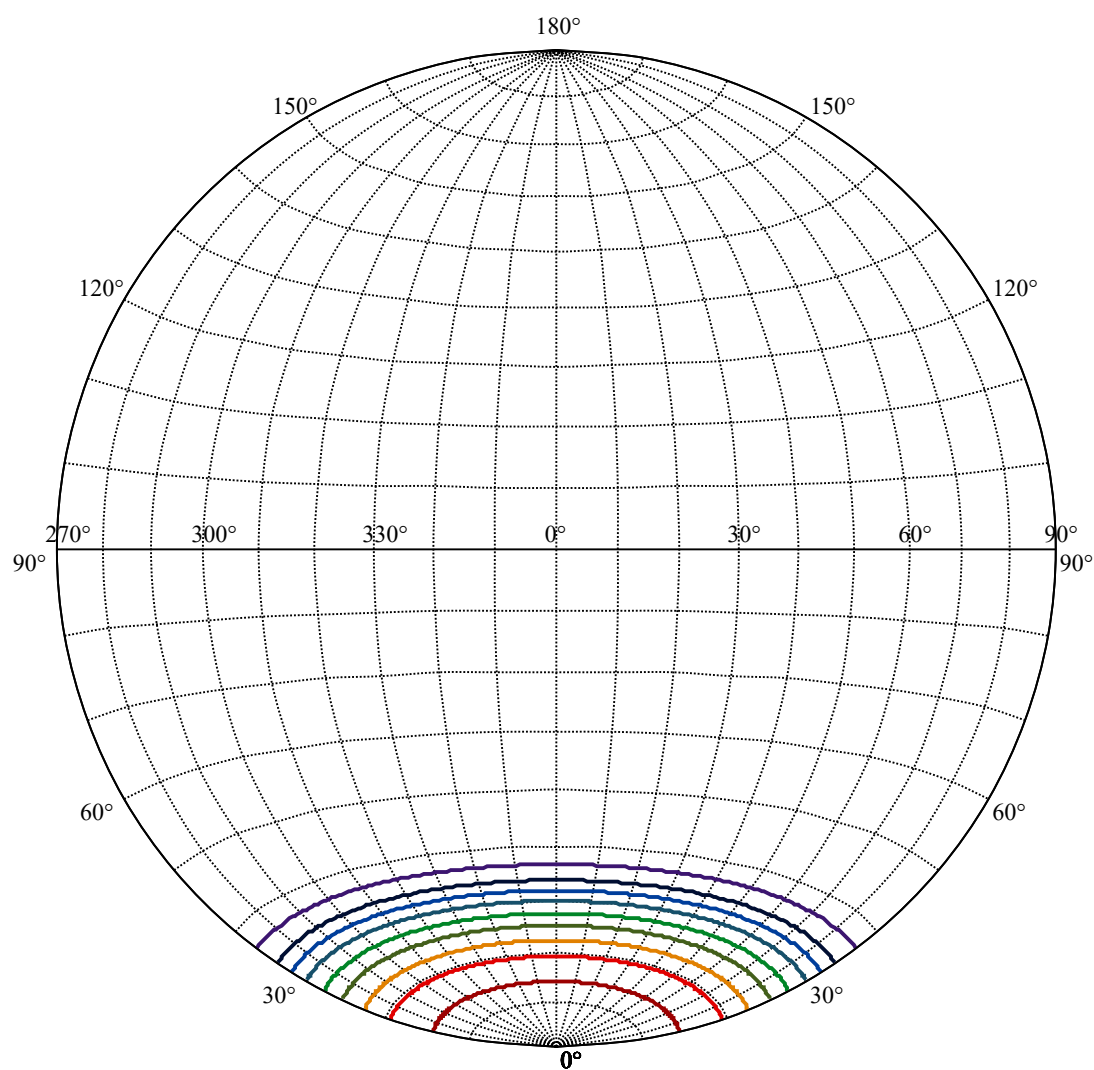
:C90/270Left:36.8 Right:36.8

Beam Angle(50%Imax):C0/180Left:27.7 Right:27.7

:C90/270Left:27.7 Right:27.7







House

[Unit:cd]

Road

Imax:2768.51

(10%Imax) 276.851

(20%Imax) 553.702

(30%Imax) 830.553

(40%Imax) 1107.4

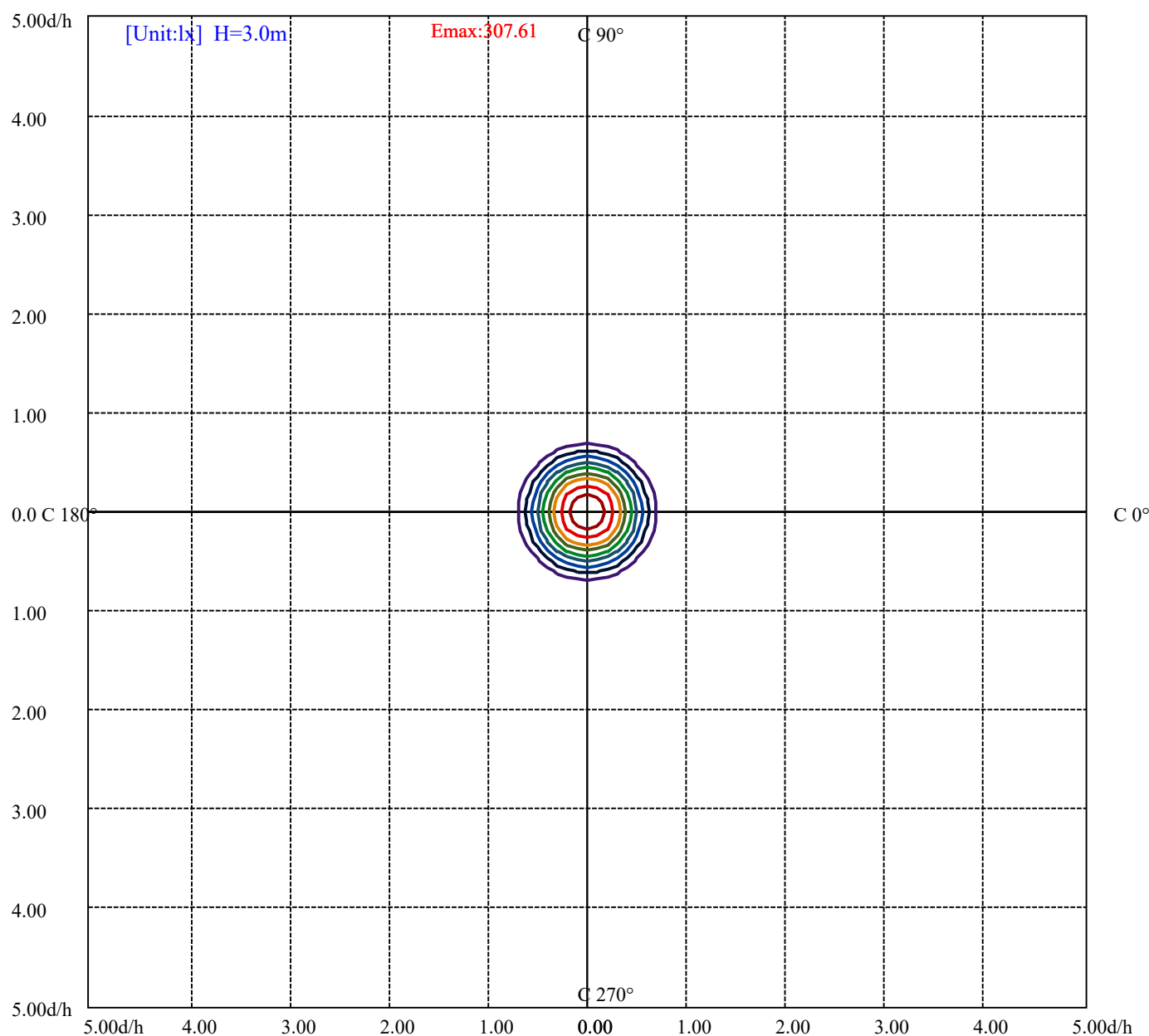
(50%Imax) 1384.26

(60%Imax) 1661.11

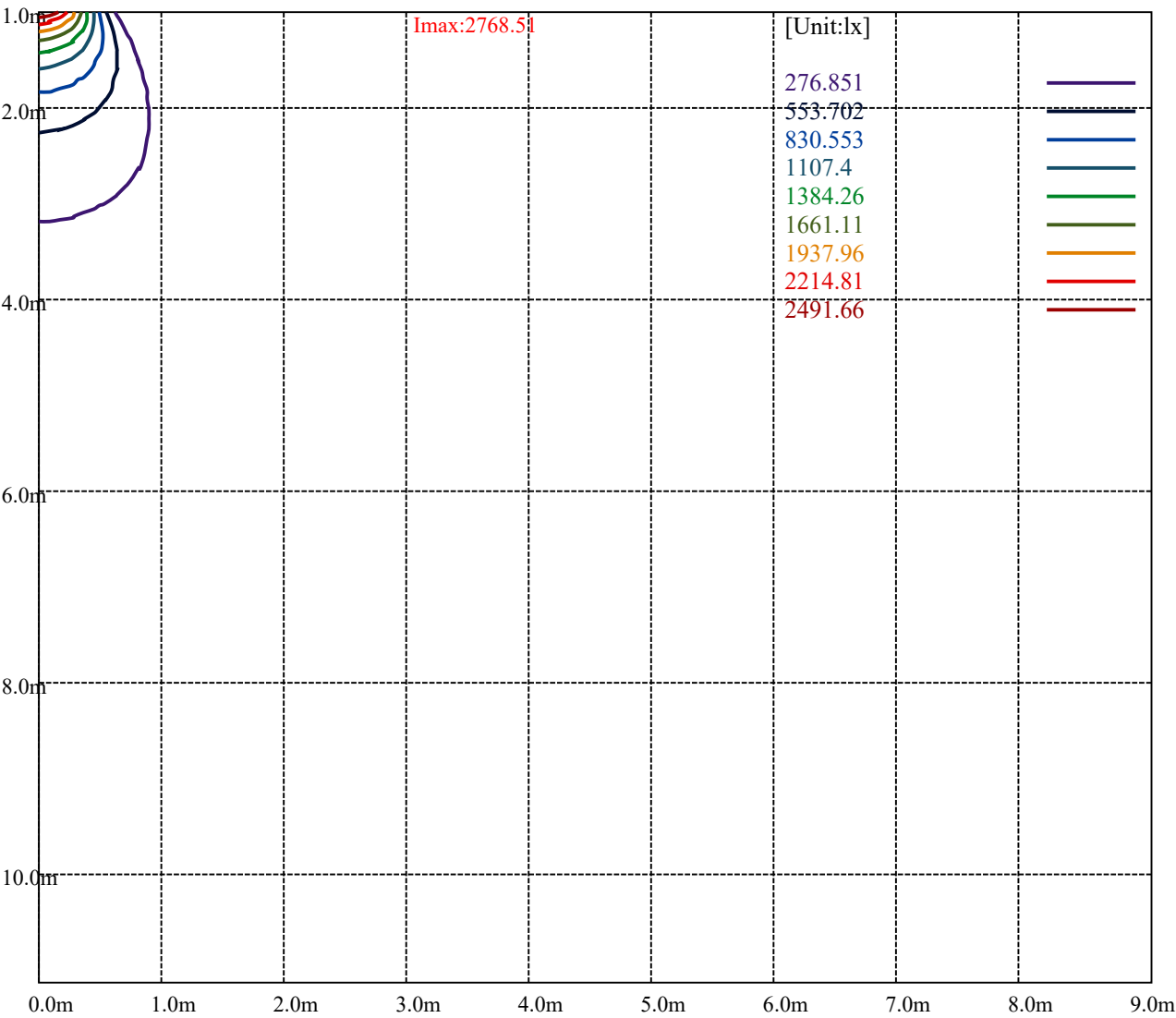
(70%Imax) 1937.96

(80%Imax) 2214.81

(90%Imax) 2491.66



(10%E _{max}) 30.76122	
(20%E _{max}) 61.52245	
(30%E _{max}) 92.28366	
(40%E _{max}) 123.0444	
(50%E _{max}) 153.8056	
(60%E _{max}) 184.5678	
(70%E _{max}) 215.3289	
(80%E _{max}) 246.09	
(90%E _{max}) 276.8511	



Luminance Table

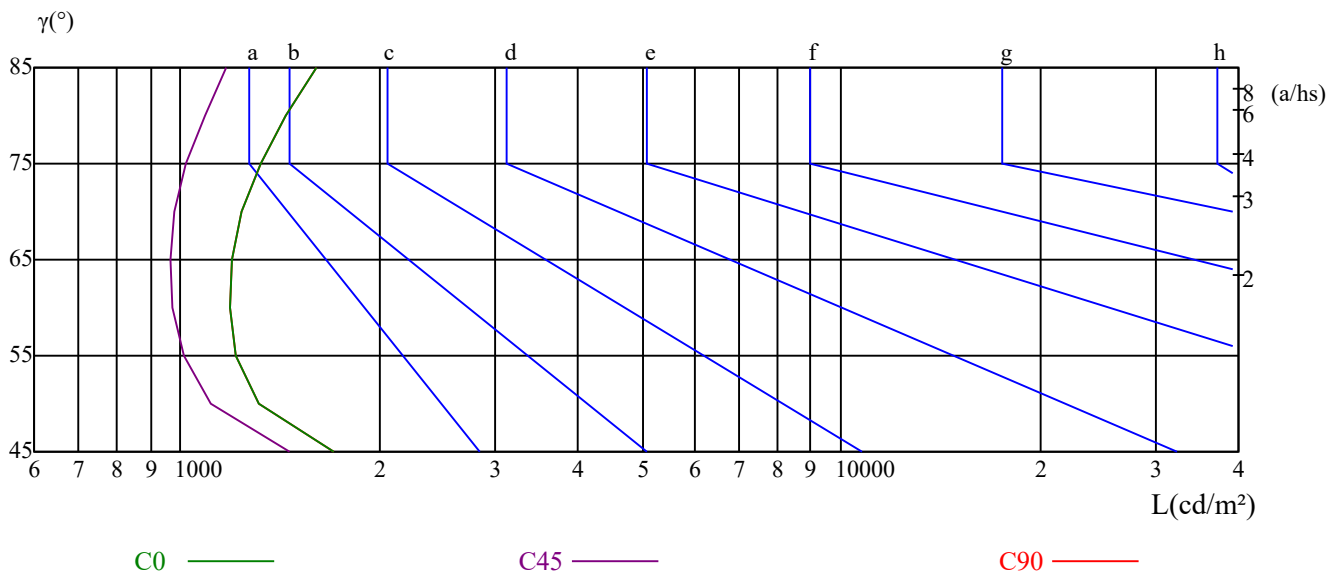
γ	45	50	55	60	65	70	75	80	85
C0	1708	1312	1213	1189	1198	1236	1320	1444	1601
C45	1467	1109	1010	974	964	976	1020	1089	1173
C90	1708	1312	1213	1189	1198	1236	1320	1444	1601

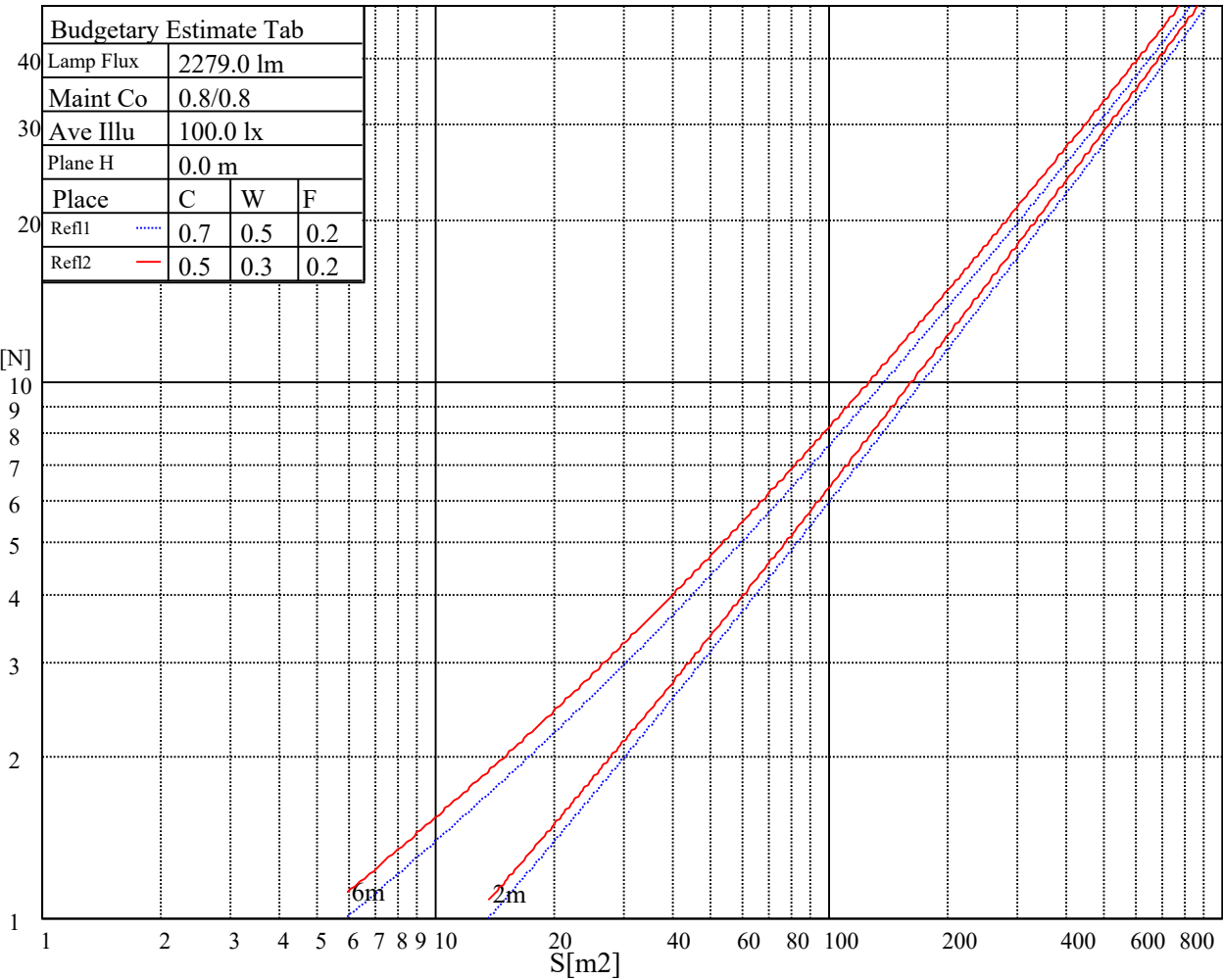
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2889	2889	2889	4567	4567	4567	13661	13661	13661

Glare Table

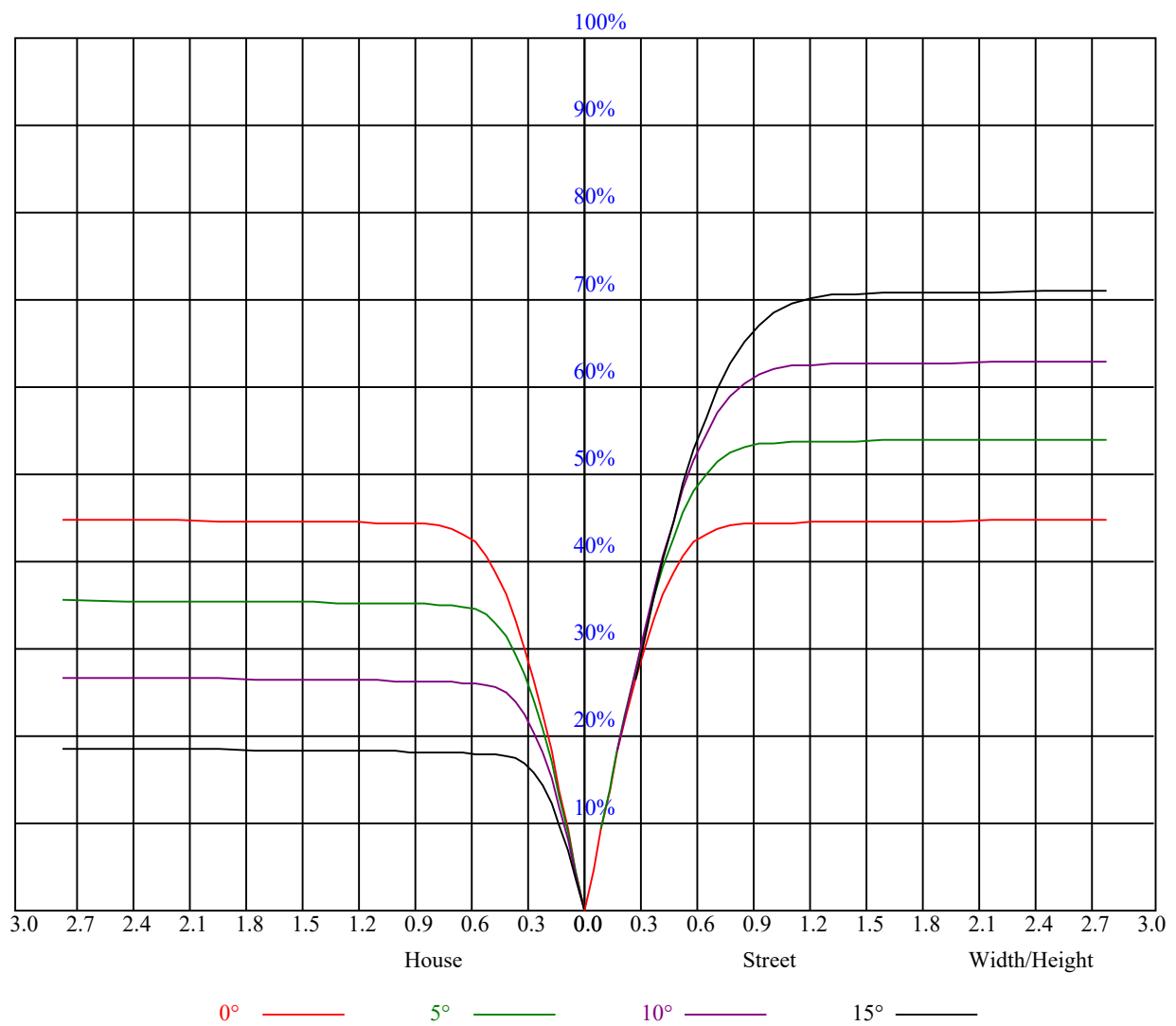
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.08	1.08	1.08	1.05	1.05	1.05	1.01	1.01	1.01	0.96	0.96	0.96	0.92	0.92	0.92	0.91
1	1.01	0.98	0.96	0.99	0.97	0.95	0.95	0.93	0.92	0.92	0.90	0.89	0.88	0.87	0.87	0.85
2	0.94	0.91	0.88	0.93	0.89	0.87	0.90	0.87	0.85	0.87	0.85	0.83	0.84	0.83	0.81	0.80
3	0.88	0.84	0.81	0.87	0.83	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.81	0.78	0.76	0.75
4	0.83	0.79	0.75	0.82	0.78	0.75	0.80	0.77	0.74	0.79	0.75	0.73	0.77	0.74	0.72	0.71
5	0.79	0.74	0.70	0.78	0.73	0.70	0.76	0.72	0.69	0.75	0.71	0.68	0.73	0.70	0.68	0.67
6	0.74	0.69	0.66	0.74	0.69	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.63
7	0.70	0.65	0.62	0.70	0.65	0.62	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.59
8	0.67	0.62	0.58	0.66	0.61	0.58	0.65	0.61	0.58	0.64	0.60	0.58	0.64	0.60	0.57	0.56
9	0.63	0.58	0.55	0.63	0.58	0.55	0.62	0.58	0.55	0.61	0.57	0.55	0.61	0.57	0.54	0.53
10	0.60	0.55	0.52	0.60	0.55	0.52	0.59	0.55	0.52	0.59	0.55	0.52	0.58	0.54	0.52	0.51



Nata 3-1945-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	2773.19	2750.62	2682.90	2520.48	2257.86	1883.48	1266.85	537.35	72.18		
45.0	2758.88	2745.11	2678.49	2576.09	2322.28	1915.41	1372.01	641.41	148.54		
90.0	2766.03	2724.19	2612.98	2442.30	2186.29	1719.96	1085.38	412.81	38.87		
135.0	2775.94	2719.79	2616.83	2479.19	2219.87	1746.94	1176.56	425.59	41.35		
180.0	2773.19	2694.46	2587.10	2418.08	2120.22	1565.80	994.26	277.37	28.63		
225.0	2758.88	2695.01	2585.45	2382.29	2031.03	1507.44	862.62	156.53	25.11		
270.0	2766.03	2750.07	2666.38	2490.75	2175.83	1677.02	1097.27	422.28	39.75		
315.0	2775.94	2741.26	2637.75	2445.61	2126.83	1661.05	1083.62	363.98	42.67		
360.0	2773.19	2750.62	2682.90	2520.48	2257.86	1883.48	1266.85	537.35	72.18		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	16.79	11.45	10.02	9.41	8.97	8.70	8.64	8.81	9.03		
45.0	16.74	11.34	9.91	9.25	8.86	8.59	8.53	8.64	8.86		
90.0	13.49	10.63	9.58	9.03	8.75	8.53	8.42	8.53	8.48		
135.0	14.48	10.96	9.80	9.30	8.92	8.64	8.64	8.64	8.48		
180.0	12.88	10.52	9.58	9.14	8.70	8.53	8.59	8.48	8.48		
225.0	12.11	10.19	9.47	8.92	8.64	8.42	8.42	8.37	8.48		
270.0	14.59	10.90	9.80	9.25	8.86	8.64	8.59	8.64	8.48		
315.0	14.70	11.01	9.91	9.25	8.86	8.59	8.48	8.53	8.53		
360.0	16.79	11.45	10.02	9.41	8.97	8.70	8.64	8.81	9.03		
C/ γ (°)	90.0										
0.0	8.37										
45.0	8.26										
90.0	8.26										
135.0	8.31										
180.0	8.31										
225.0	8.31										
270.0	8.26										
315.0	8.26										
360.0	8.37										