
Nata

LumCAT: 1652-S	
Luminaire: 92.70.044.00	
Report No: NT2017121103	Voltage(V): 38.3000
Test No: nata-0100	Current(A): 0.3000
LampCAT: LUMIEDS 1202S	Power (W): 11.4900
Lamp flux(lm): 1251.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 22	Width(mm): 22
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1128.88
Efficiency(%): 90.24%
Lumens(lm)/Power(W): 98.25
Central intensity(cd): 1834.892
Maximum intensity(cd): 1834.892
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=42.8
[C90/270]Total=42.8
Field angle(10%Imax): [C0/180]Total=80.8
[C90/270]Total=80.8
Maximum s/h(1/2): C0_180=0.69 C90_270=0.69
Maximum s/h(1/4): C0_180=0.67 C90_270=0.67
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.03%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.851%

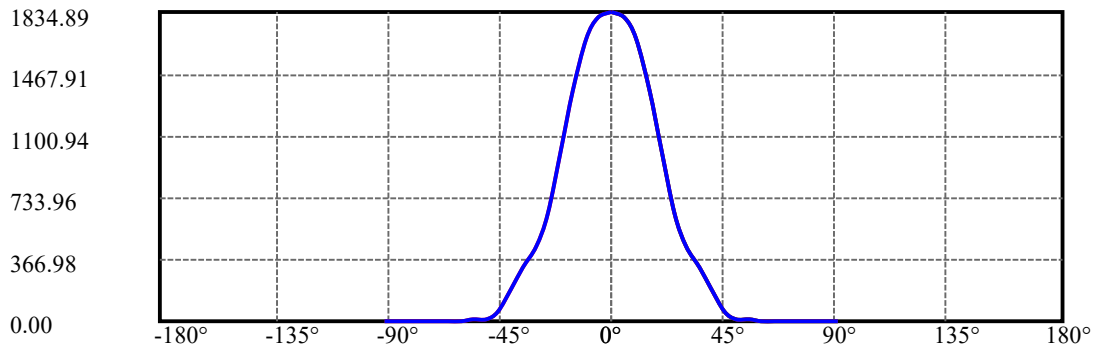
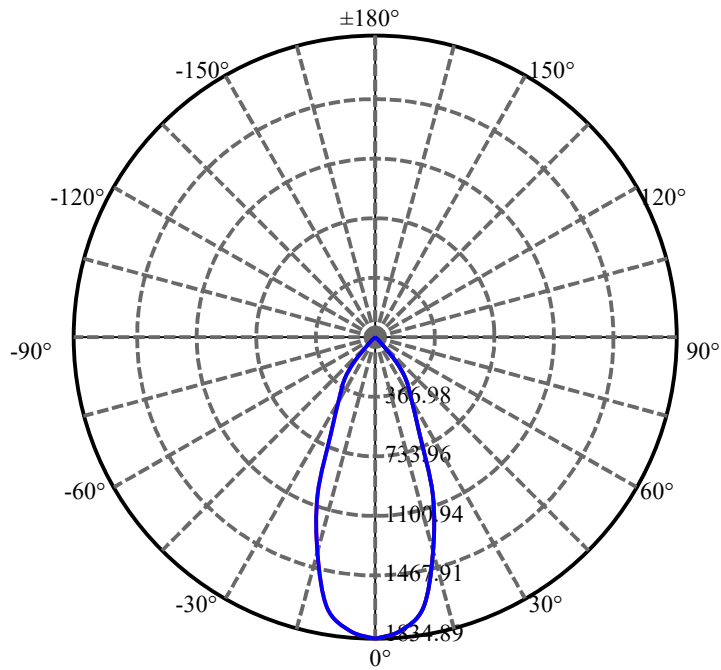
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1834.892	10.973	10.973	.877%	.972%
5.0	1800.413	86.012	96.985	6.875%	8.591%
10.0	1672.476	159.191	256.176	12.725%	22.693%
15.0	1372.797	194.756	450.933	15.568%	39.945%
20.0	1025.542	192.263	643.195	15.369%	56.977%
25.0	641.063	148.504	791.699	11.871%	70.132%
30.0	442.199	121.193	912.892	9.688%	80.867%
35.0	320.566	100.785	1013.678	8.056%	89.795%
40.0	194.597	68.563	1082.241	5.481%	95.869%
45.0	56.075	21.734	1103.975	1.737%	97.794%
50.0	11.273	4.733	1108.709	.378%	98.213%
55.0	6.703	3.010	1111.719	.241%	98.480%
60.0	5.451	2.587	1114.306	.207%	98.709%
65.0	5.244	2.605	1116.911	.208%	98.940%
70.0	5.093	2.623	1119.534	.210%	99.172%
75.0	5.017	2.656	1122.191	.212%	99.408%
80.0	4.941	2.667	1124.858	.213%	99.644%
85.0	4.928	2.691	1127.549	.215%	99.882%
90.0	4.845	1.328	1128.876	.106%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	912.89	72.97%	80.87%
0-40	1082.24	86.51%	95.87%
0-60	1114.31	89.07%	98.71%
0-90	1127.55	90.13%	99.88%
0-120	1127.55	90.13%	99.88%
0-180	1128.88	90.24%	100.00%
60-90	15.83	1.27%	1.40%
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%
0-29.60	903.10	72.19%	80.00%

ZONAL LUMEN SUMMARY

0-10	256.18
10-20	387.02
20-30	269.70
30-40	169.35
40-50	26.47
50-60	5.60
60-70	5.23
70-80	5.32
80-90	2.69
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: —————

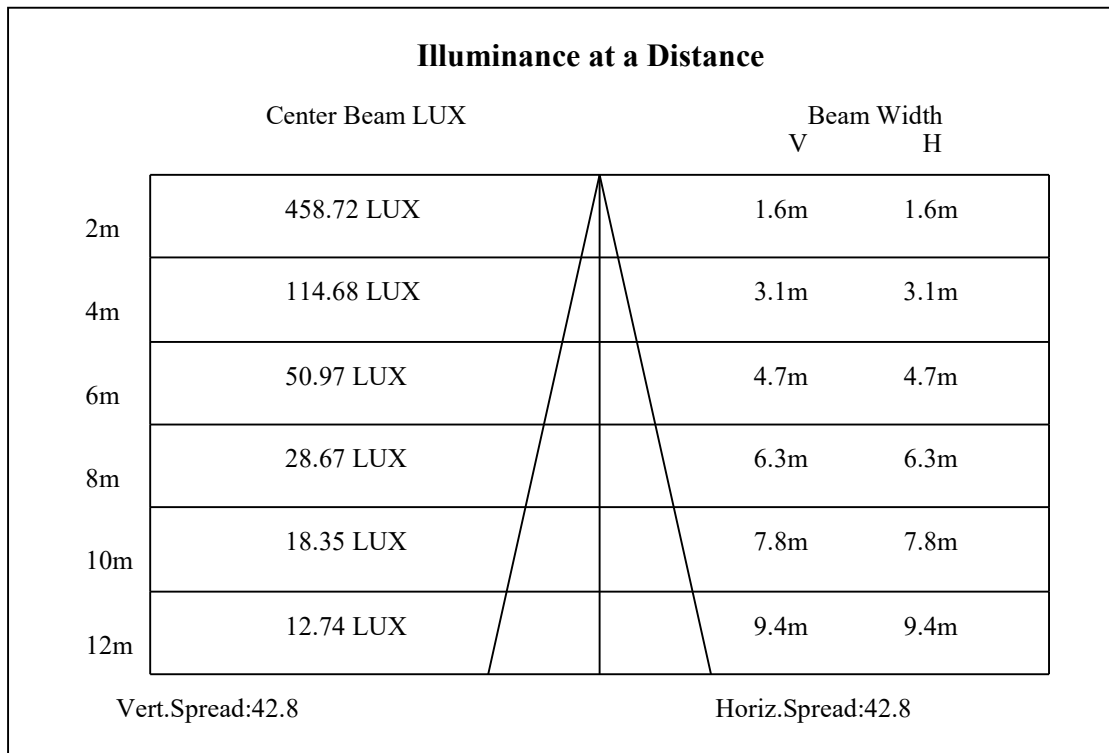
C90/C270: —————

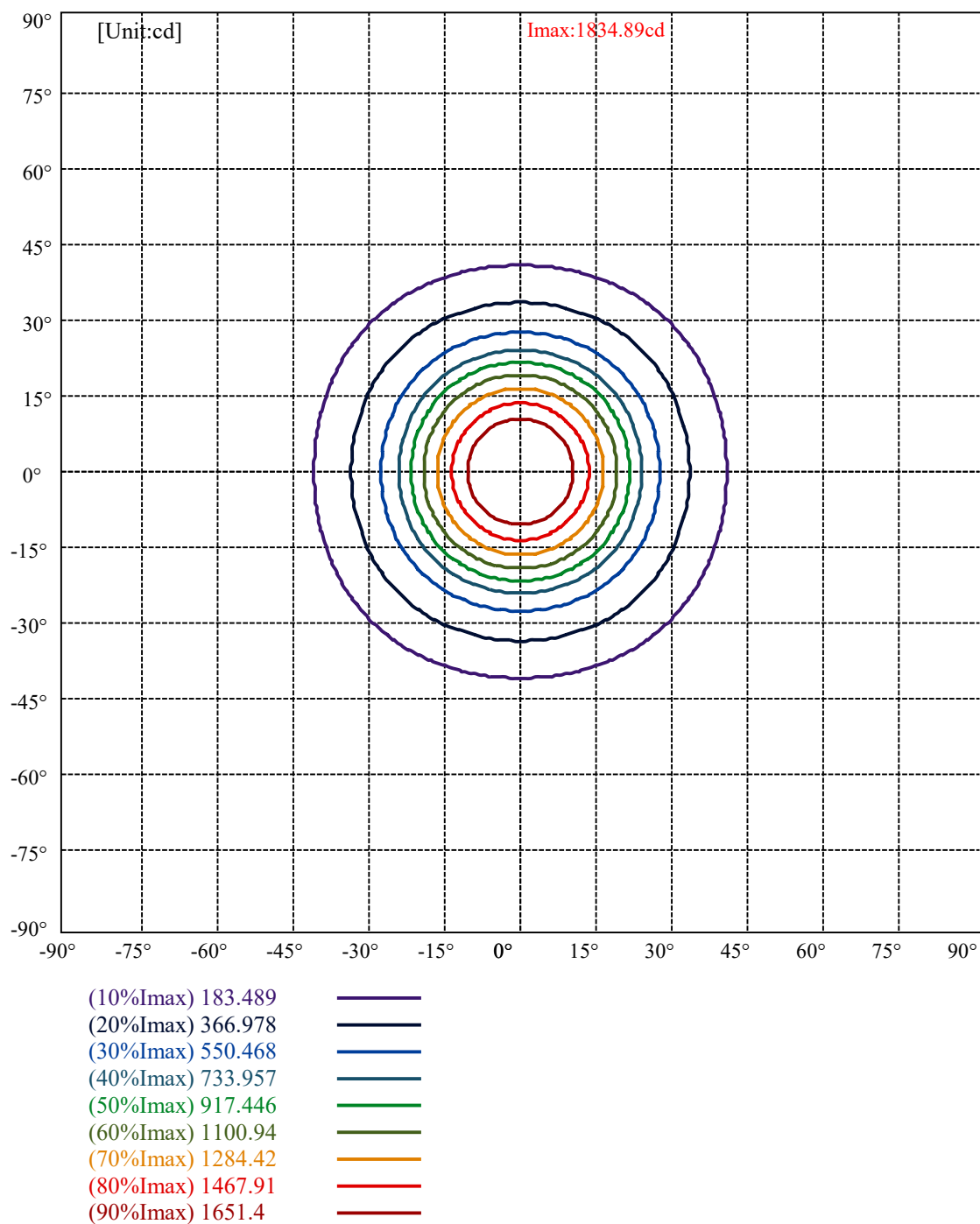
Field angle(10%Imax):C0/180Left:40.4 Right:40.4

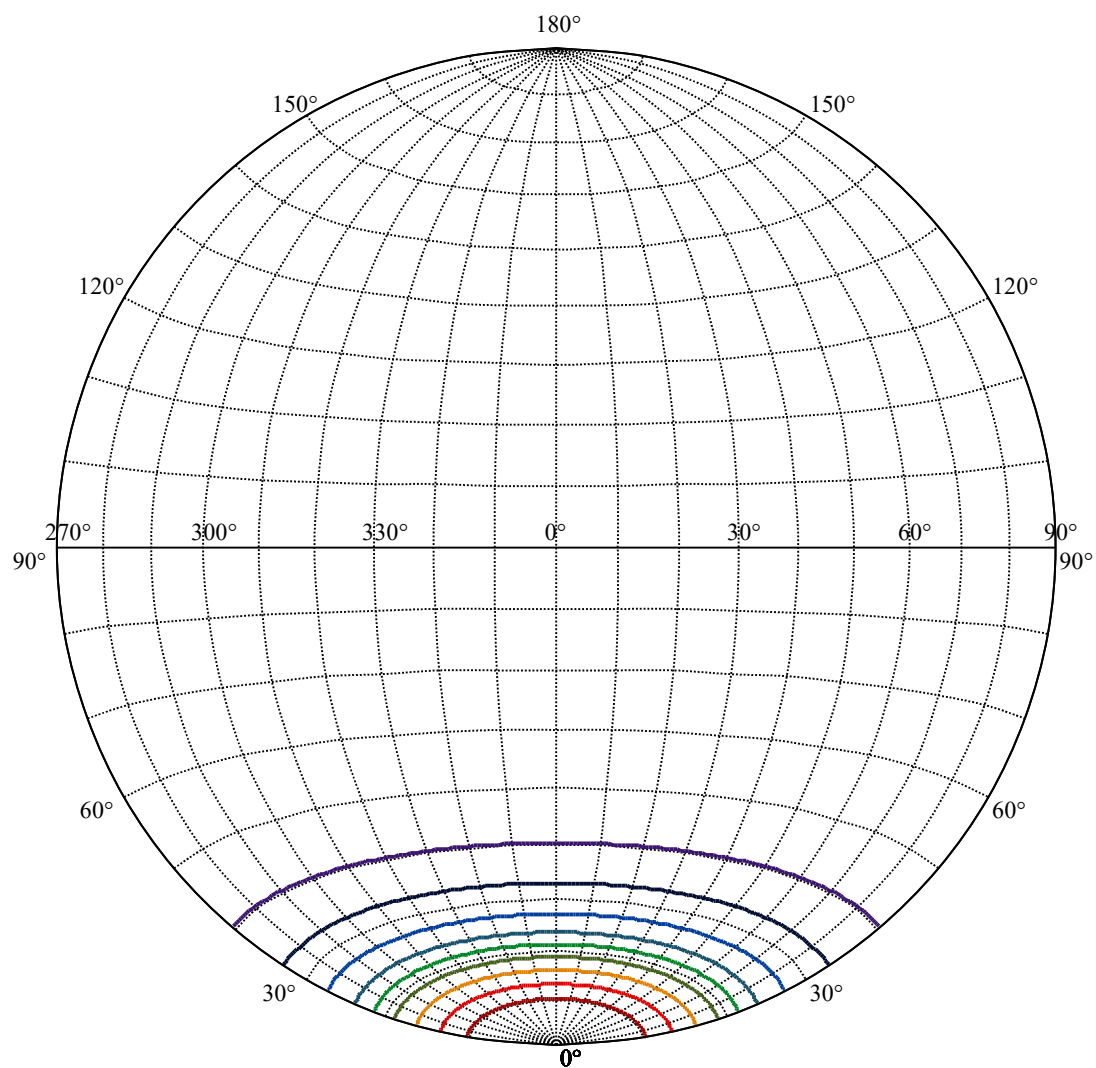
:C90/270Left:40.4 Right:40.4

Beam Angle(50%Imax):C0/180Left:21.4 Right:21.4

:C90/270Left:21.4 Right:21.4







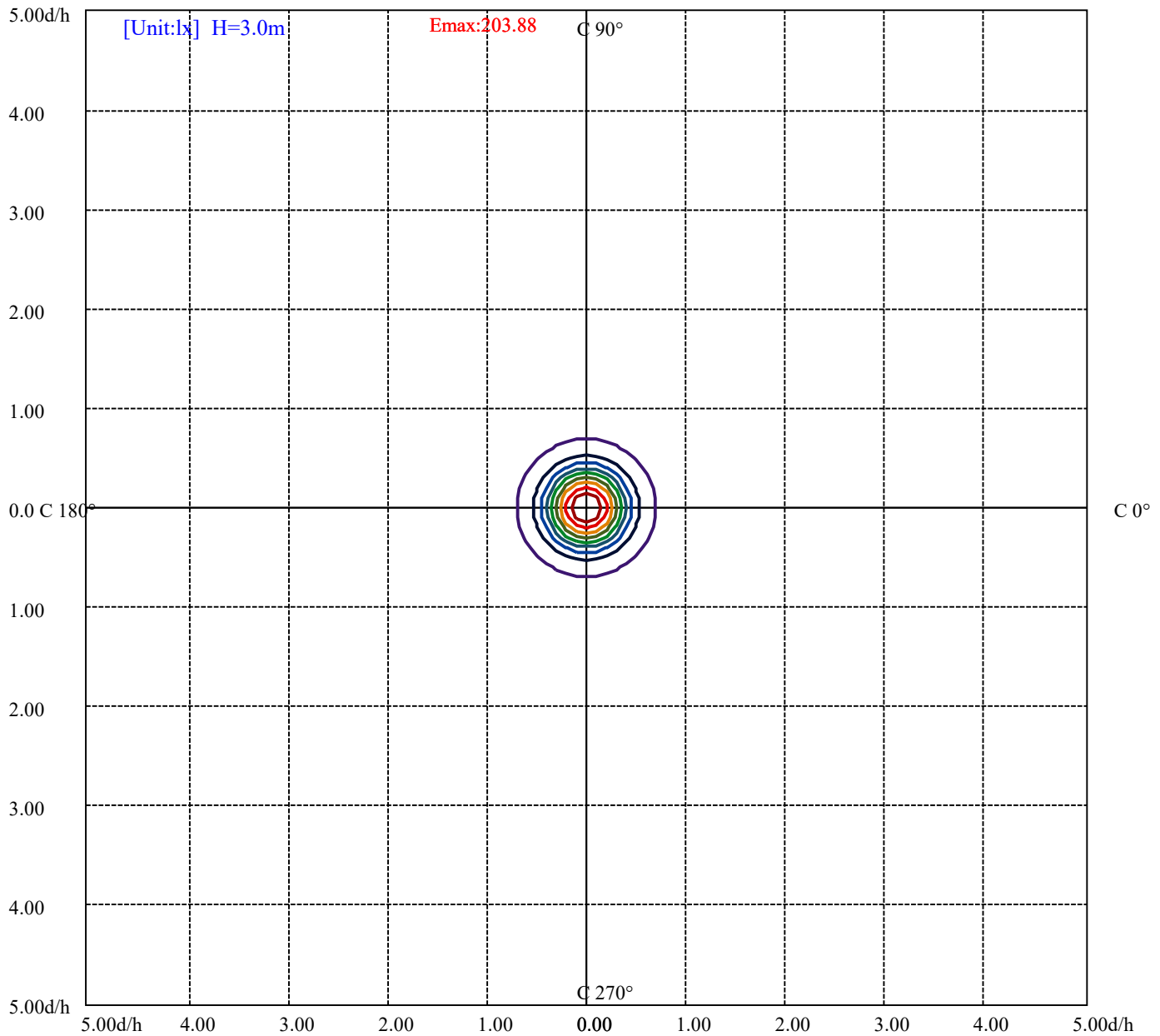
House

[Unit:cd]

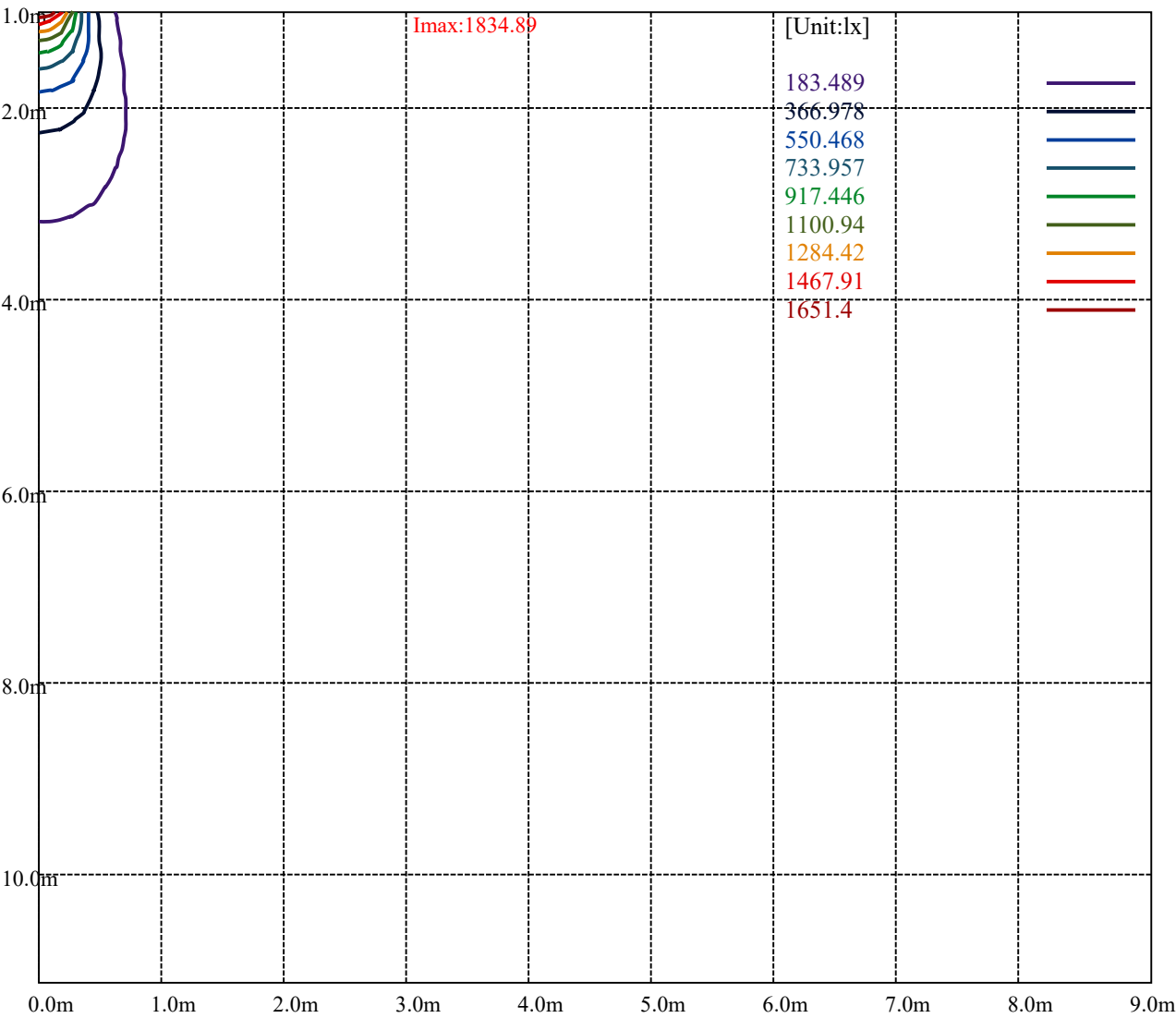
Road

Imax:1834.89

(10%Imax)	183.489	—
(20%Imax)	366.978	—
(30%Imax)	550.468	—
(40%Imax)	733.957	—
(50%Imax)	917.446	—
(60%Imax)	1100.94	—
(70%Imax)	1284.42	—
(80%Imax)	1467.91	—
(90%Imax)	1651.4	—



(10%Emax) 20.38767	—
(20%Emax) 40.77533	—
(30%Emax) 61.163	—
(40%Emax) 81.55067	—
(50%Emax) 101.9383	—
(60%Emax) 122.3256	—
(70%Emax) 142.7133	—
(80%Emax) 163.1011	—
(90%Emax) 183.4889	—



Luminance Table

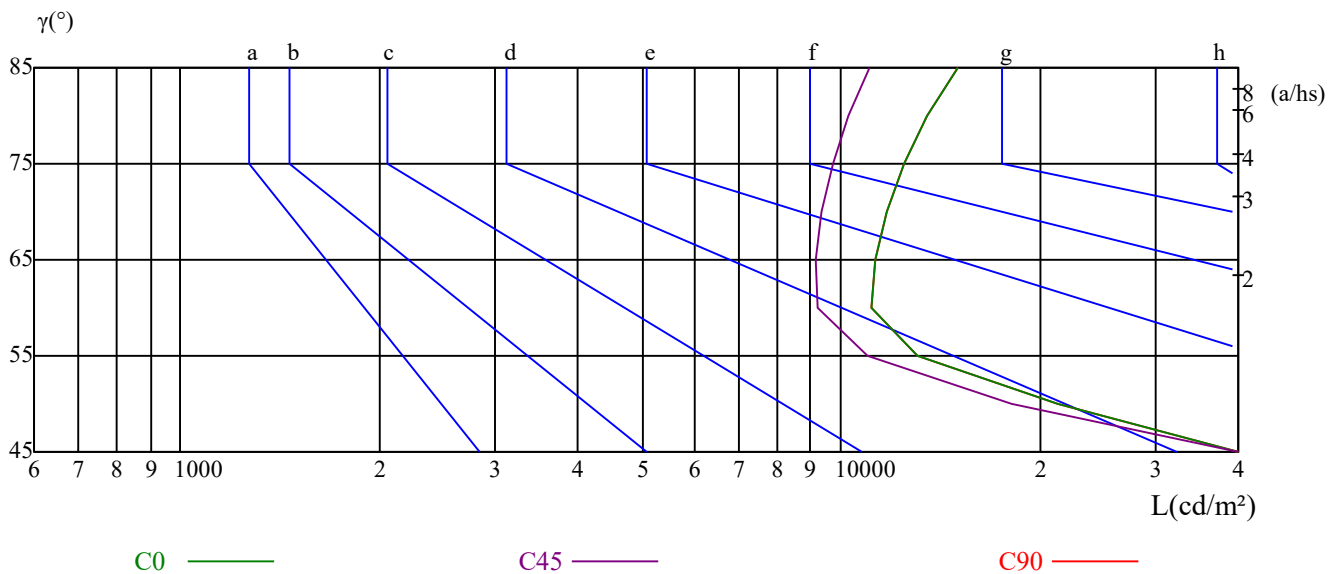
γ	45	50	55	60	65	70	75	80	85
C0	102990	21261	13095	11131	11308	11727	12495	13512	15065
C45	89257	18154	11008	9203	9182	9334	9724	10244	11070
C90	102990	21261	13095	11131	11308	11727	12495	13512	15065

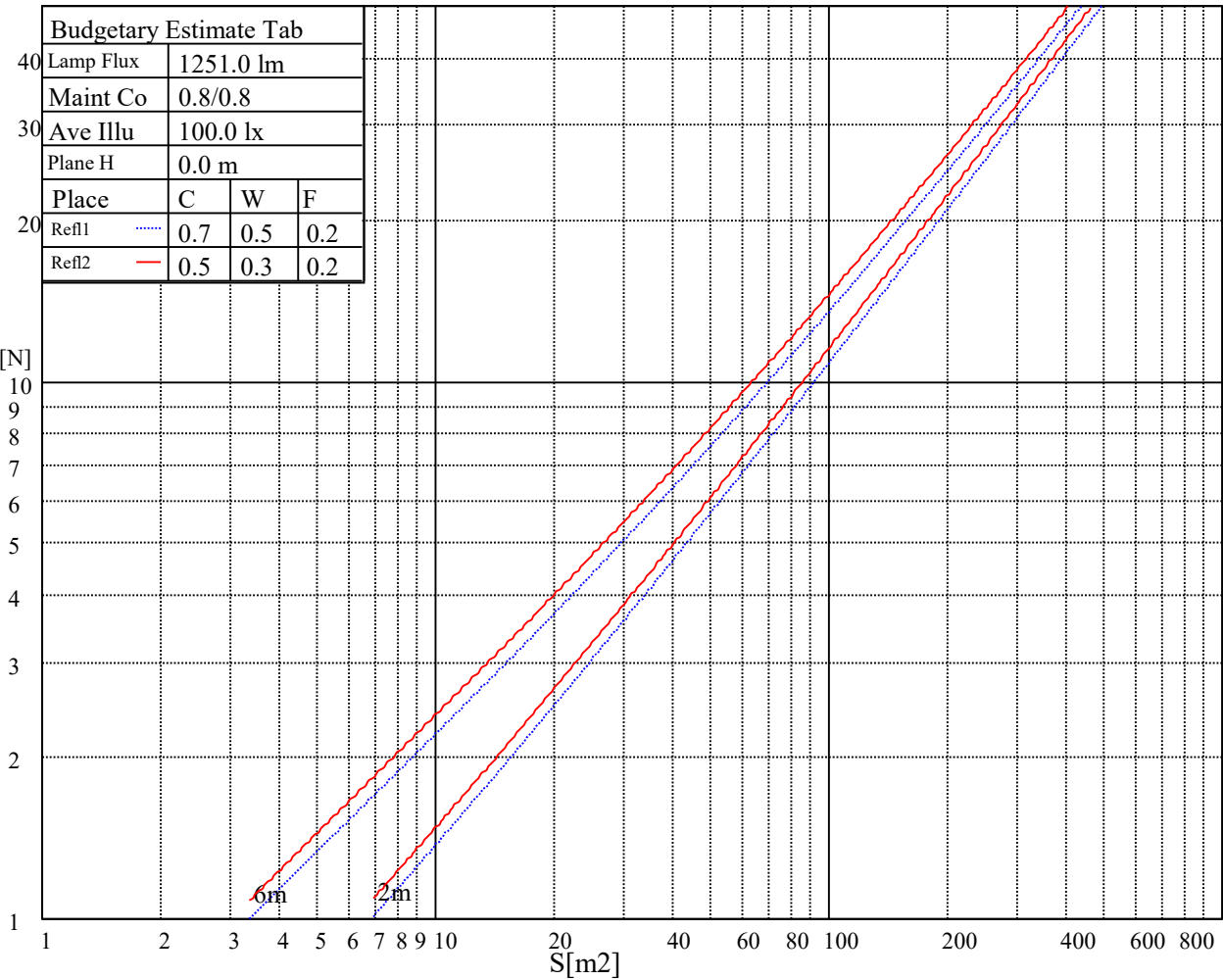
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
25638	25638	25638	40050	40050	40050	116813	116813	116813

Glare Table

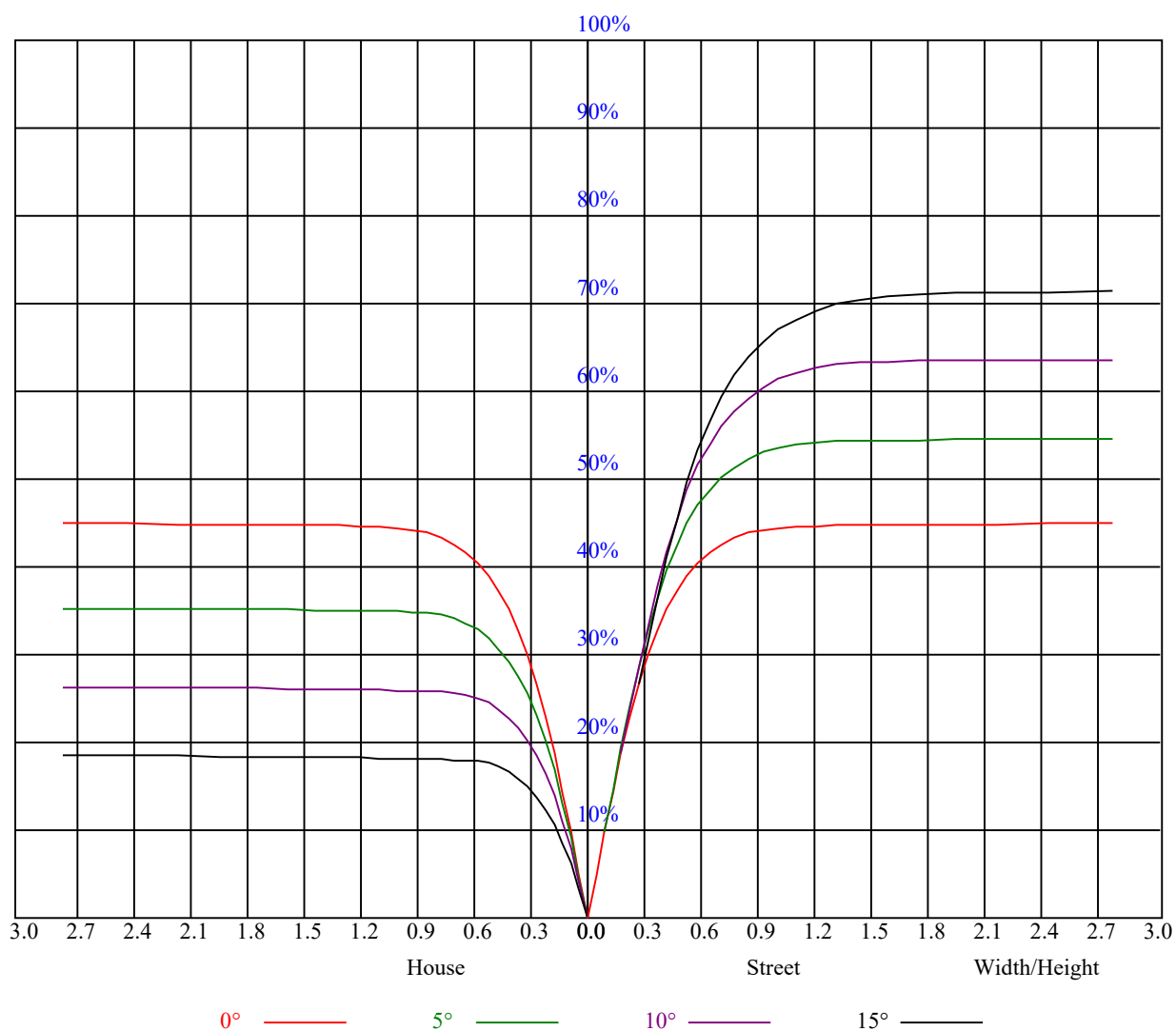
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.08	1.08	1.08	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.00	0.98	0.96	0.98	0.96	0.94	0.95	0.93	0.91	0.91	0.90	0.89	0.88	0.87	0.86	0.84
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	0.85	0.83	0.81	0.80
3	0.89	0.85	0.81	0.88	0.84	0.81	0.85	0.82	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.76
4	0.84	0.80	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.79	0.76	0.74	0.78	0.75	0.73	0.72
5	0.80	0.75	0.72	0.79	0.75	0.71	0.77	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.69	0.68
6	0.76	0.71	0.68	0.75	0.71	0.67	0.74	0.70	0.67	0.73	0.69	0.66	0.72	0.68	0.66	0.65
7	0.72	0.68	0.64	0.72	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.63	0.69	0.65	0.63	0.62
8	0.69	0.64	0.61	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.60	0.66	0.63	0.60	0.59
9	0.66	0.62	0.58	0.66	0.61	0.58	0.65	0.61	0.58	0.64	0.61	0.58	0.64	0.60	0.58	0.57
10	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.56	0.62	0.58	0.55	0.61	0.58	0.55	0.54



Nata 1652-S

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	1832.28	1838.88	1784.93	1582.32	1237.67	811.53	500.46	376.04	278.59
45.0	1838.88	1817.96	1698.49	1400.63	1017.44	603.97	422.28	311.62	179.32
90.0	1830.63	1779.42	1615.91	1220.05	893.24	541.15	399.54	289.49	149.09
135.0	1837.78	1783.83	1617.01	1307.04	913.94	564.88	418.43	303.36	155.48
180.0	1832.28	1735.93	1536.07	1089.84	833.22	506.79	394.59	261.79	119.91
225.0	1838.88	1805.30	1667.66	1408.34	1049.32	652.91	456.20	326.81	184.38
270.0	1830.63	1819.61	1723.82	1489.83	1169.95	749.32	485.05	358.42	279.14
315.0	1837.78	1822.37	1735.93	1484.32	1089.57	697.95	461.04	337.00	210.87
360.0	1832.28	1838.88	1784.93	1582.32	1237.67	811.53	500.46	376.04	278.59
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	107.25	15.36	8.64	5.56	5.29	5.12	5.01	4.96	4.90
45.0	50.93	10.90	6.28	5.45	5.23	5.07	5.01	4.90	4.90
90.0	30.72	10.46	5.73	5.40	5.23	5.07	5.01	4.90	4.90
135.0	37.27	10.96	5.84	5.56	5.29	5.12	5.07	4.96	4.96
180.0	20.32	9.36	5.73	5.45	5.29	5.18	5.07	5.01	5.01
225.0	46.91	10.74	6.33	5.40	5.23	5.07	5.01	4.96	4.96
270.0	80.38	11.34	7.54	5.40	5.18	5.07	4.96	4.90	4.90
315.0	74.82	11.07	7.54	5.40	5.23	5.07	5.01	4.96	4.90
360.0	107.25	15.36	8.64	5.56	5.29	5.12	5.01	4.96	4.90
C/γ(°)	90.0								
0.0	4.90								
45.0	4.79								
90.0	4.79								
135.0	4.79								
180.0	4.84								
225.0	4.84								
270.0	4.90								
315.0	4.90								
360.0	4.90								