
Nata

LumCAT: 2-1092-E
Luminaire: 92.76.263.00
Report No: NT2014082806
Test No: GC2014082806
LampCAT: VERO13
Lamp flux(lm): 1635.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 33.2000
Current(A): 0.5000
Power (W): 16.6000
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 1447.78
Efficiency(%): 88.55%
Lumens(lm)/Power(W): 87.22
Central intensity(cd): 3263.028
Maximum intensity(cd): 3263.028
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=33.4
 [C90/270]Total=33.4
Field angle(10%Imax): [C0/180]Total=71.6
 [C90/270]Total=71.6
Maximum s/h(1/2): C0_180=0.55 C90_270=0.55
Maximum s/h(1/4): C0_180=0.56 C90_270=0.56
Up flux rate of lamp(%): 2.66%
Down flux rate of lamp(%): 85.89%
Up flux rate of LUM(%): 3.00%
Down flux rate of LUM(%): 97.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 95.516%

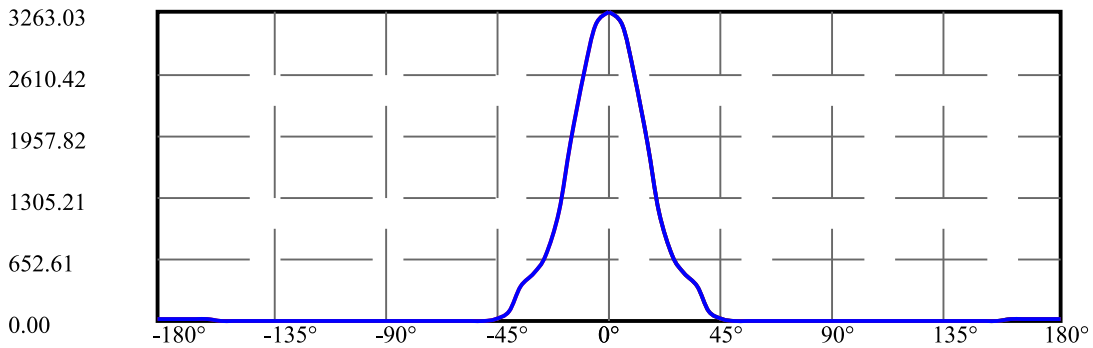
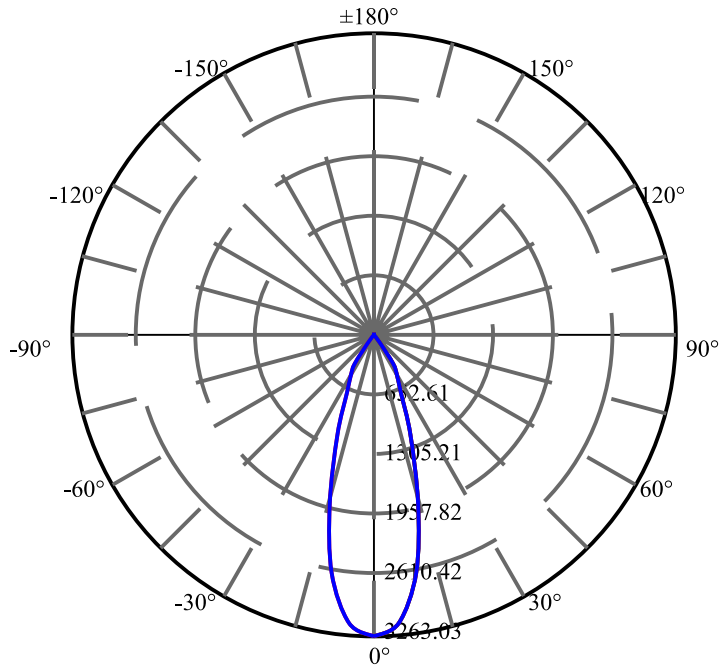
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3263.027	0.000	0	.000%	.000%
5.0	3119.375	76.300	76.3	4.667%	5.270%
10.0	2622.302	205.398	281.698	12.563%	19.457%
15.0	1887.020	267.490	549.188	16.360%	37.933%
20.0	1146.009	249.964	799.152	15.288%	55.199%
25.0	689.337	192.494	991.646	11.773%	68.494%
30.0	508.957	151.645	1143.291	9.275%	78.969%
35.0	371.706	129.684	1272.975	7.932%	87.926%
40.0	95.908	78.018	1350.993	4.772%	93.315%
45.0	12.789	20.126	1371.119	1.231%	94.705%
50.0	9.236	4.451	1375.57	.272%	95.012%
55.0	8.001	3.748	1379.318	.229%	95.271%
60.0	7.292	3.535	1382.853	.216%	95.516%
65.0	6.868	3.442	1386.295	.211%	95.753%
70.0	6.625	3.417	1389.712	.209%	95.989%
75.0	6.509	3.433	1393.145	.210%	96.226%
80.0	6.579	3.502	1396.647	.214%	96.468%
85.0	7.633	3.862	1400.508	.236%	96.735%
90.0	6.266	3.806	1404.314	.233%	96.998%
95.0	6.271	3.433	1407.747	.210%	97.235%
100.0	6.271	3.408	1411.155	.208%	97.470%
105.0	6.262	3.353	1414.508	.205%	97.702%
110.0	6.262	3.273	1417.782	.200%	97.928%
115.0	6.257	3.170	1420.952	.194%	98.147%
120.0	6.262	3.043	1423.995	.186%	98.357%
125.0	6.271	2.897	1426.892	.177%	98.557%
130.0	6.322	2.738	1429.63	.167%	98.747%
135.0	6.374	2.565	1432.196	.157%	98.924%
140.0	6.448	2.374	1434.57	.145%	99.088%
145.0	6.887	2.225	1436.794	.136%	99.241%
150.0	7.912	2.179	1438.974	.133%	99.392%
155.0	9.358	2.186	1441.159	.134%	99.543%
160.0	10.705	2.104	1443.263	.129%	99.688%
165.0	11.740	1.850	1445.113	.113%	99.816%
170.0	12.519	1.439	1446.552	.088%	99.915%
175.0	12.999	0.913	1447.465	.056%	99.978%
180.0	13.158	0.313	1447.778	.019%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1143.29	69.93%	78.97%
0-40	1350.99	82.63%	93.31%
0-60	1382.85	84.58%	95.52%
0-90	1404.31	85.89%	97.00%
0-120	1423.99	87.09%	98.36%
0-180	1447.78	88.55%	100.00%
60-90	25.00	1.53%	1.73%
90-120	23.49	1.44%	1.62%
90-130	29.12	1.78%	2.01%
90-150	38.47	2.35%	2.66%
90-180	46.96	2.87%	3.24%
0-30.58	1158.22	70.84%	80.00%

ZONAL LUMEN SUMMARY

0-10	281.70
10-20	517.45
20-30	344.14
30-40	207.70
40-50	24.58
50-60	7.28
60-70	6.86
70-80	6.94
80-90	7.67
90-100	6.84
100-110	6.63
110-120	6.21
120-130	5.64
130-140	4.94
140-150	4.40
150-160	4.29
160-170	3.29
170-180	0.91



C0(Max): —————

C0/C180: —————

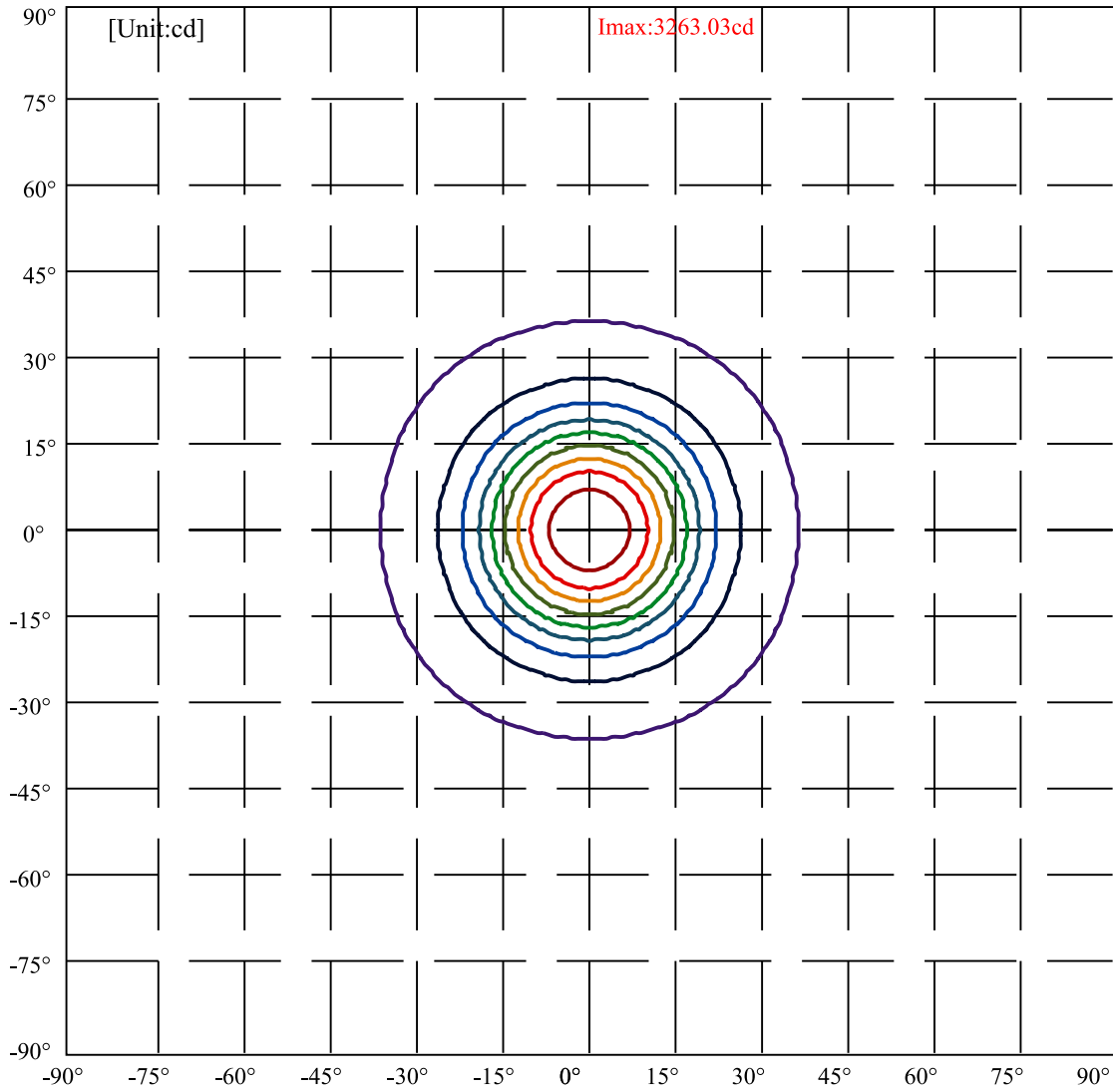
C90/C270: —————

Field angle(10%Imax):C0/180Left:35.8 Right:35.8

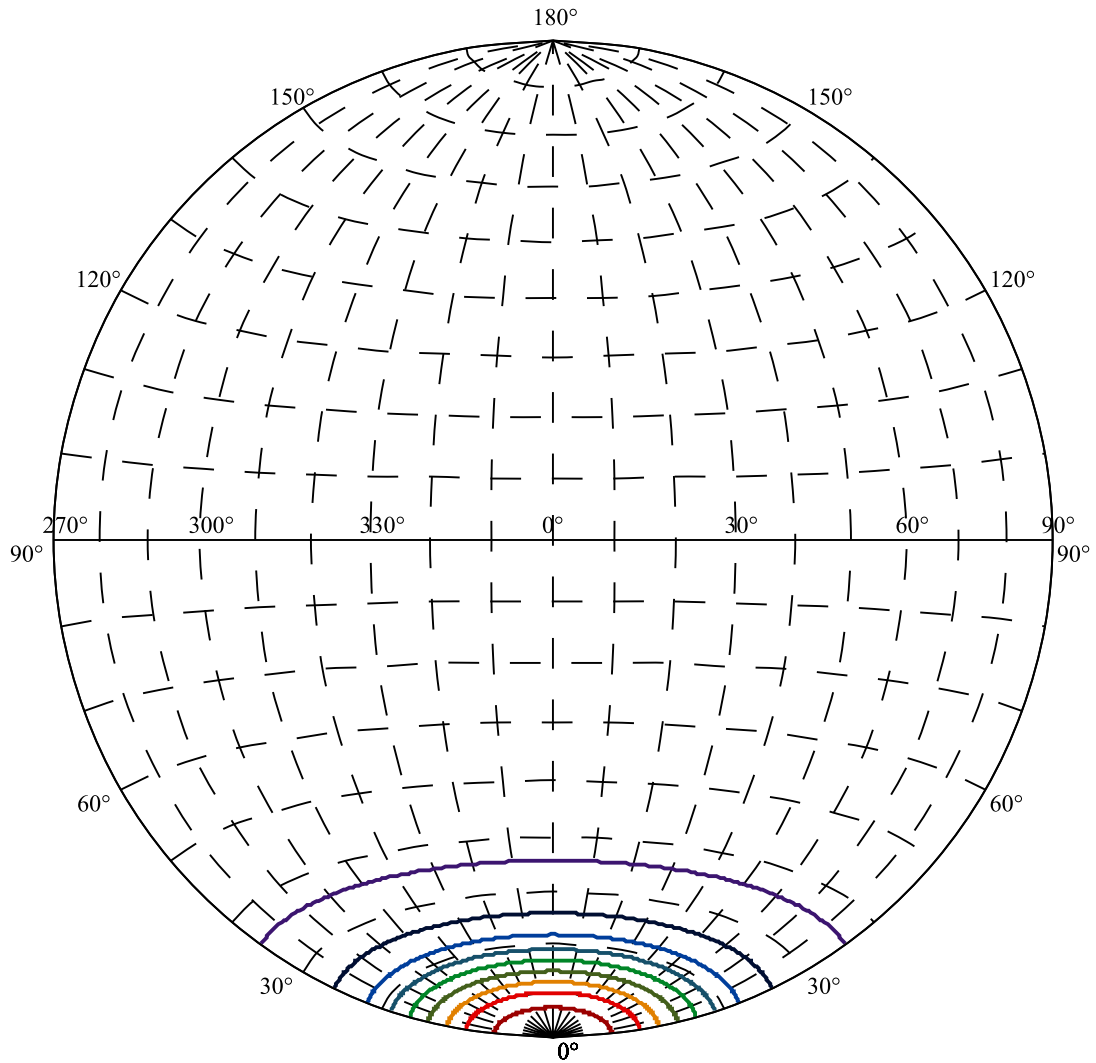
:C90/270Left:35.8 Right:35.8

Beam Angle(50%Imax):C0/180Left:16.7 Right:16.7

:C90/270Left:16.7 Right:16.7



(10%Imax) 326.303	—
(20%Imax) 652.606	—
(30%Imax) 978.908	—
(40%Imax) 1305.21	—
(50%Imax) 1631.51	—
(60%Imax) 1957.82	—
(70%Imax) 2284.12	—
(80%Imax) 2610.42	—
(90%Imax) 2936.72	—



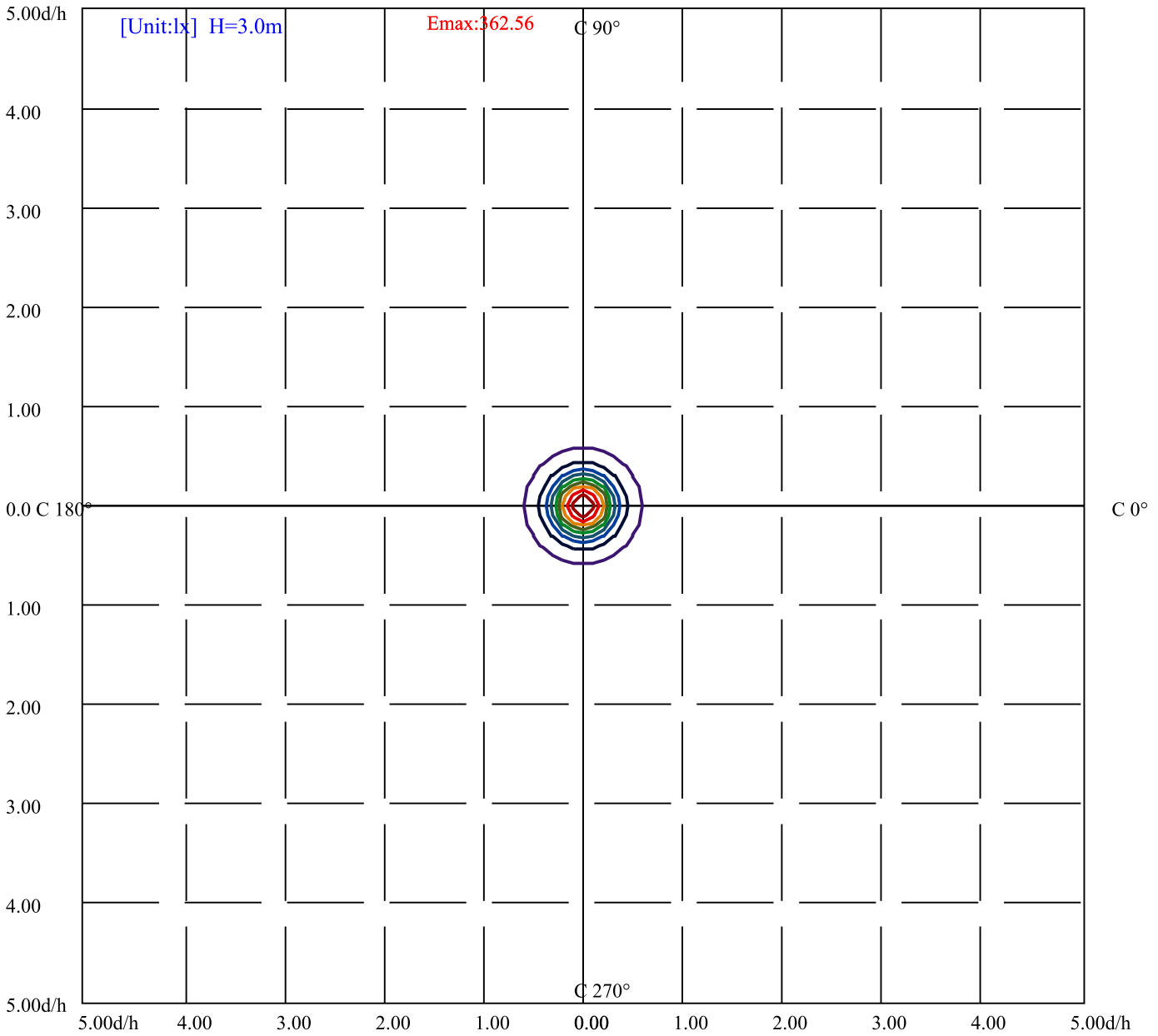
House

[Unit:cd]

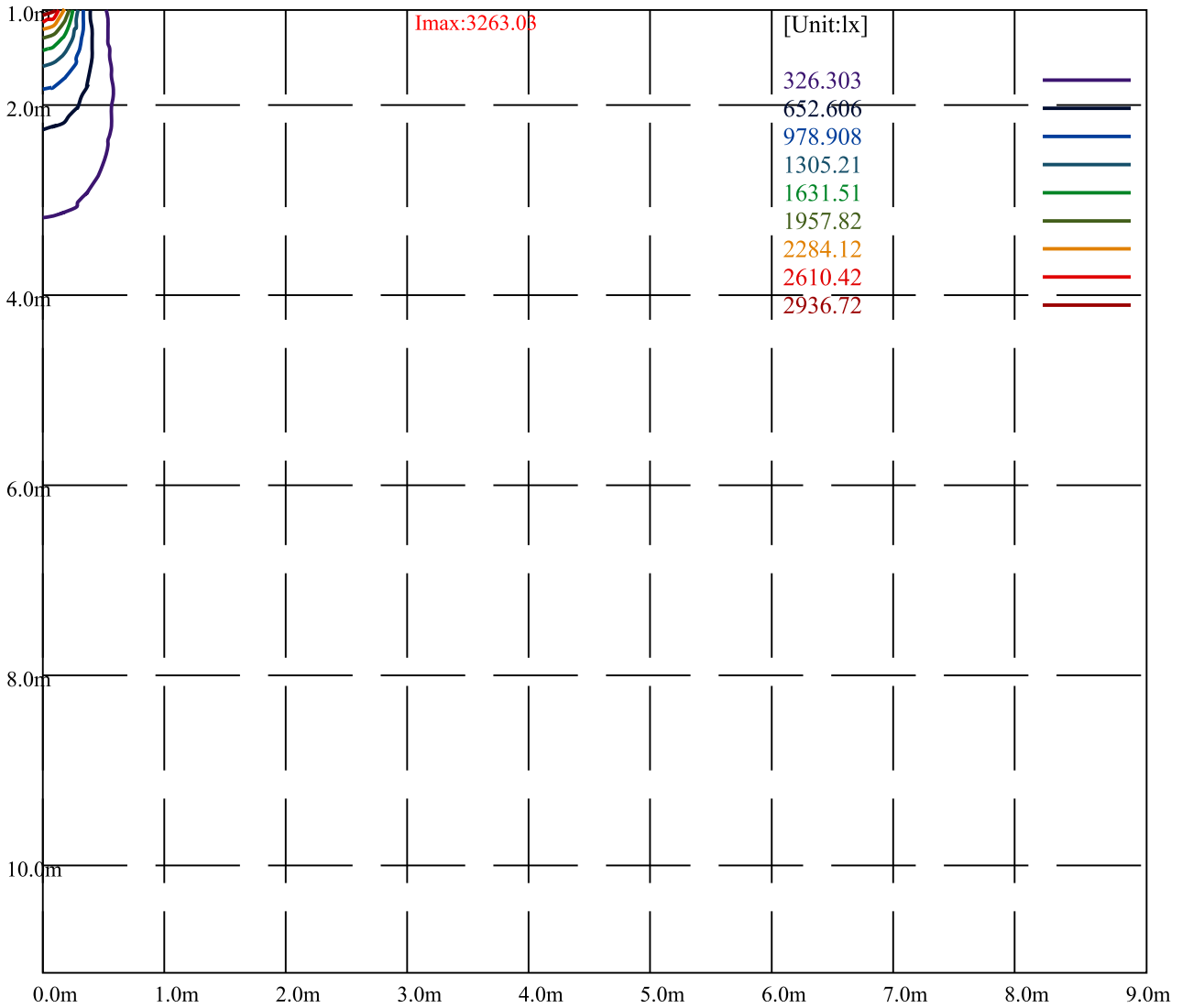
Road

Imax:3263.03

(10%Imax)	326.303	—
(20%Imax)	652.606	—
(30%Imax)	978.908	—
(40%Imax)	1305.21	—
(50%Imax)	1631.51	—
(60%Imax)	1957.82	—
(70%Imax)	2284.12	—
(80%Imax)	2610.42	—
(90%Imax)	2936.72	—



- (10%Emax) 36.25578
- (20%Emax) 72.51167
- (30%Emax) 108.7674
- (40%Emax) 145.0233
- (50%Emax) 181.2789
- (60%Emax) 217.5345
- (70%Emax) 253.7911
- (80%Emax) 290.0467
- (90%Emax) 326.3022



Luminance Table

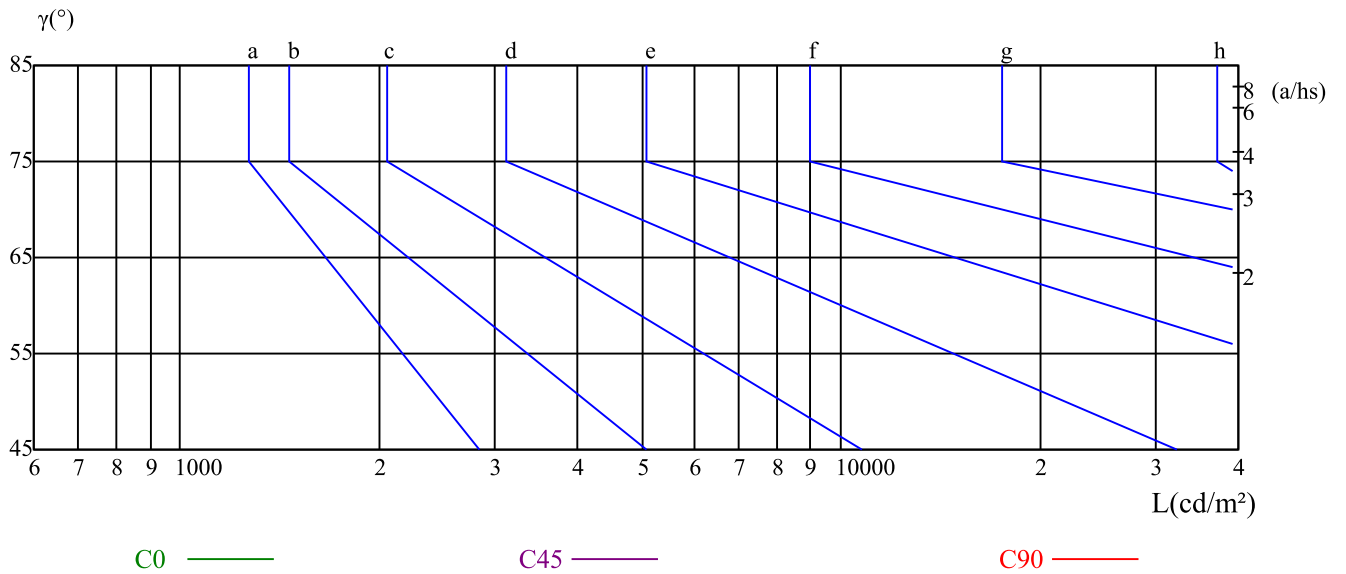
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

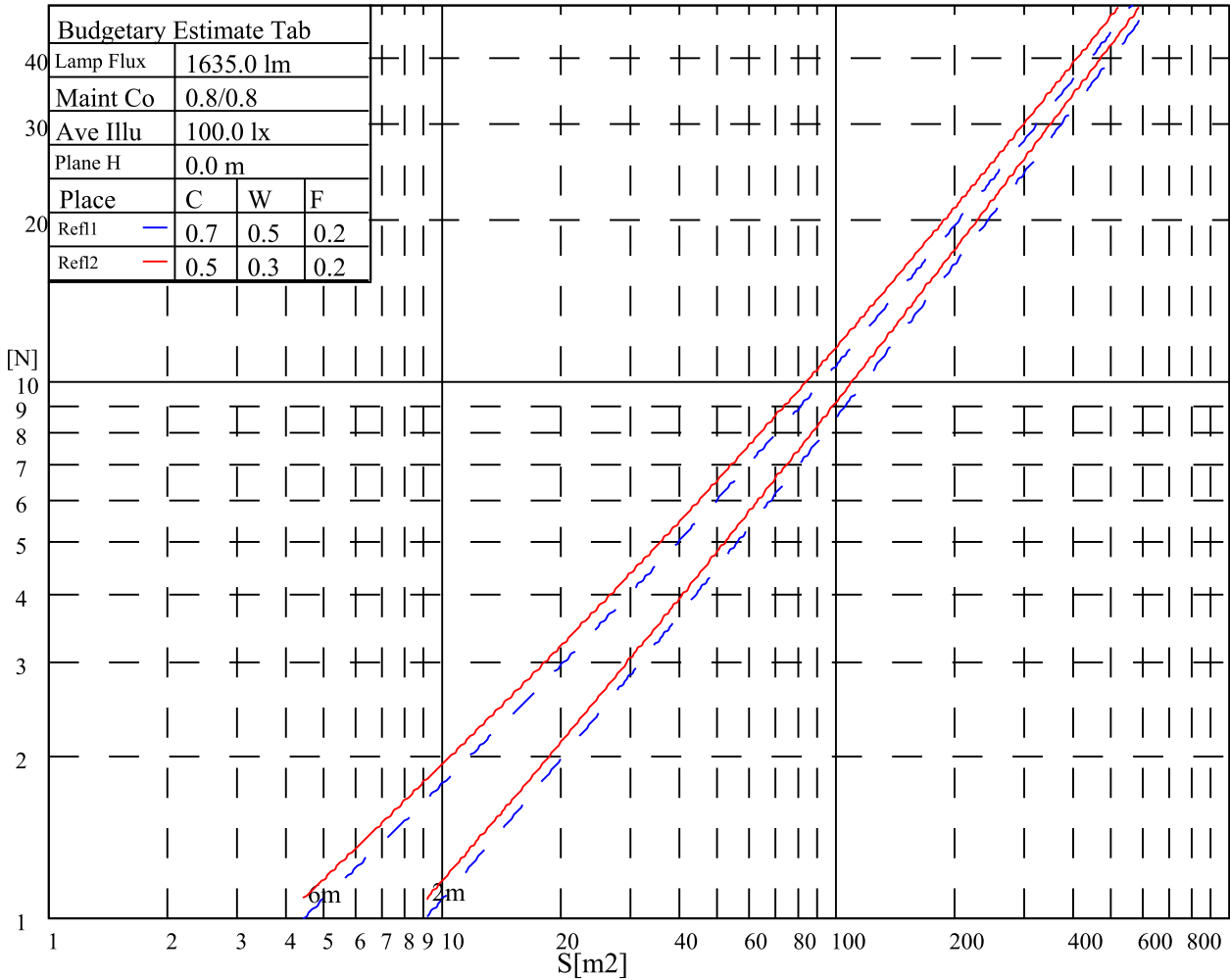
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

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 RHOF=20 CU															
0	1.05	1.05	1.05	1.02	1.02	1.02	0.97	0.97	0.97	0.92	0.92	0.92	0.88	0.88	0.88	0.86
1	0.98	0.96	0.94	0.96	0.94	0.92	0.92	0.90	0.89	0.88	0.87	0.86	0.84	0.84	0.83	0.81
2	0.92	0.88	0.86	0.90	0.87	0.85	0.87	0.84	0.82	0.84	0.82	0.80	0.81	0.79	0.78	0.77
3	0.86	0.82	0.79	0.85	0.81	0.78	0.82	0.79	0.77	0.80	0.77	0.75	0.78	0.76	0.74	0.72
4	0.82	0.77	0.74	0.81	0.76	0.73	0.78	0.75	0.72	0.76	0.73	0.71	0.74	0.72	0.70	0.69
5	0.77	0.73	0.69	0.76	0.72	0.69	0.75	0.71	0.68	0.73	0.70	0.67	0.71	0.69	0.67	0.65
6	0.74	0.69	0.66	0.73	0.68	0.65	0.71	0.67	0.65	0.70	0.66	0.64	0.68	0.66	0.63	0.62
7	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.59
8	0.67	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.58	0.64	0.61	0.58	0.63	0.60	0.58	0.57
9	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.59	0.56	0.62	0.58	0.55	0.61	0.57	0.55	0.54
10	0.61	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.53	0.59	0.56	0.53	0.58	0.55	0.53	0.52

Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	3240.65	3099.09	2597.22	1848.60	1126.84	653.50	499.64	357.52	77.83
30.0	3289.88	3151.69	2661.00	1851.96	1121.81	647.35	499.64	358.08	75.14
60.0	3278.69	3120.35	2488.11	1801.60	1047.84	633.69	489.12	339.17	59.53
90.0	3260.23	3185.26	2746.61	1970.01	1222.52	714.49	511.95	392.21	130.42
120.0	3259.67	3143.85	2630.79	1898.96	1102.95	690.82	499.53	371.01	94.05
150.0	3249.04	3167.35	2750.52	2067.37	1327.70	763.16	532.65	425.78	203.72
180.0	3240.65	3071.12	2619.04	1924.13	1108.49	719.91	514.35	386.11	85.66
210.0	3289.88	3136.02	2663.24	1955.47	1105.69	736.64	525.93	398.53	100.04
240.0	3278.69	3137.14	2718.63	1996.31	1272.31	738.55	537.68	413.47	125.55
270.0	3260.23	3062.17	2517.77	1780.90	1105.02	664.52	498.80	351.26	66.13
300.0	3259.67	3103.57	2609.53	1842.45	1211.33	683.71	511.95	362.00	88.07
330.0	3249.04	3054.89	2465.17	1706.49	999.61	625.69	486.26	305.32	44.76
360.0	3240.65	3099.09	2597.22	1848.60	1126.84	653.50	499.64	357.52	77.83
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	12.03	8.73	7.67	7.05	6.71	6.55	6.49	6.66	9.01
30.0	12.87	9.06	7.89	7.27	6.94	6.66	6.60	6.55	6.88
60.0	12.70	9.18	8.00	7.27	6.83	6.66	6.55	6.60	6.71
90.0	14.60	9.68	8.22	7.50	6.99	6.71	6.55	6.55	8.11
120.0	13.37	9.12	7.94	7.22	6.83	6.60	6.43	6.43	7.05
150.0	13.37	9.57	8.17	7.39	6.88	6.60	6.43	6.38	6.66
180.0	12.59	9.12	7.94	7.22	6.83	6.55	6.38	6.32	6.27
210.0	13.09	9.57	8.22	7.39	6.94	6.66	6.55	6.49	6.43
240.0	13.37	10.02	8.50	7.61	7.05	6.77	6.55	6.49	6.55
270.0	11.97	9.29	8.11	7.33	6.88	6.60	6.55	6.60	8.73
300.0	12.14	9.06	7.89	7.27	6.83	6.60	6.55	6.66	9.12
330.0	11.36	8.45	7.44	6.99	6.71	6.55	6.49	7.22	10.07
360.0	12.03	8.73	7.67	7.05	6.71	6.55	6.49	6.66	9.01
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	6.21	6.21	6.21	6.21	6.21	6.21	6.21	6.21	6.27
30.0	6.32	6.32	6.38	6.32	6.32	6.32	6.32	6.32	6.38
60.0	6.32	6.32	6.32	6.32	6.32	6.27	6.32	6.32	6.38
90.0	6.27	6.32	6.32	6.27	6.27	6.27	6.27	6.27	6.27
120.0	6.21	6.27	6.21	6.27	6.27	6.21	6.21	6.21	6.27
150.0	6.27	6.21	6.27	6.21	6.21	6.21	6.21	6.21	6.27
180.0	6.21	6.21	6.15	6.15	6.15	6.15	6.15	6.15	6.21
210.0	6.32	6.32	6.32	6.32	6.32	6.32	6.38	6.32	6.43
240.0	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.38
270.0	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.32	6.38
300.0	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.32	6.32
330.0	6.21	6.21	6.21	6.21	6.21	6.27	6.21	6.27	6.32
360.0	6.21	6.21	6.21	6.21	6.21	6.21	6.21	6.21	6.27
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	6.38	6.49	7.05	8.28	10.02	11.36	12.42	13.20	13.60
30.0	6.38	6.43	6.88	7.83	9.29	10.52	11.69	12.48	13.04
60.0	6.32	6.43	6.83	7.89	9.29	10.46	11.53	12.25	12.76
90.0	6.32	6.32	6.66	7.44	8.78	10.07	11.19	11.92	12.53
120.0	6.27	6.32	6.71	7.67	8.95	10.29	11.30	12.09	12.70
150.0	6.27	6.27	6.60	7.50	8.90	10.24	11.25	12.20	12.81
180.0	6.21	6.27	6.71	7.83	9.23	10.63	11.81	12.64	13.20
210.0	6.55	6.60	6.99	8.06	9.46	10.91	11.92	12.81	13.26
240.0	6.49	6.55	6.94	7.83	9.18	10.63	11.69	12.48	12.92
270.0	6.43	6.60	7.05	8.17	9.62	10.97	11.81	12.53	12.87
300.0	6.43	6.55	7.05	8.00	9.62	10.97	11.92	12.64	13.04
330.0	6.43	6.55	7.16	8.45	9.96	11.41	12.37	12.98	13.26
360.0	6.38	6.49	7.05	8.28	10.02	11.36	12.42	13.20	13.60

Intensity data(cd)

C/ γ ($^{\circ}$)	180.0
0.0	13.60
30.0	13.26
60.0	12.98
90.0	12.87
120.0	12.98
150.0	13.26
180.0	13.60
210.0	13.26
240.0	12.98
270.0	12.87
300.0	12.98
330.0	13.26
360.0	13.60