



NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: LN01D05060DA-N

Luminaire: 97.70.234.00

Report No: 201231-B014

Test No: 201231-C014

LampCAT: CITIZEN CLU028 LES9.8

Lamp flux(lm): 1521.0

Number of Lamps: 1

Length(mm): 92

Phm Type: C

Voltage(V): 36.9600

Current(A): 0.3800

Power (W): 14.0440

PF: 0.0000

Ballast type: DC

Width(mm): 92

Height(mm): 50

Photometric Results

Lumens(lm): 1342.05

Efficiency(%): 88.23%

Lumens(lm)/Power(W): 95.56

Central intensity(cd): 1403.719

Maximum intensity(cd): 1403.719

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=57.2

[C90/270]Total=57.2

Field angle(10%Imax): [C0/180]Total=89.6

[C90/270]Total=89.6

Maximum s/h(1/2): C0_180=0.87 C90_270=0.87

Maximum s/h(1/4): C0_180=0.88 C90_270=0.88

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 88.23%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.077%

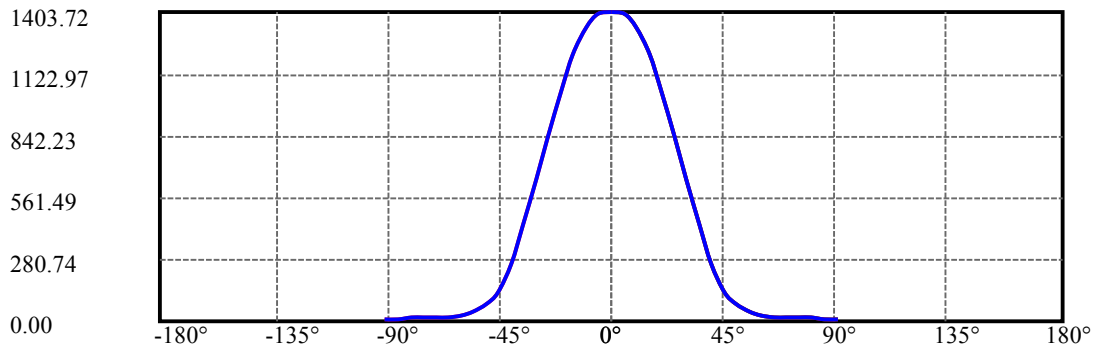
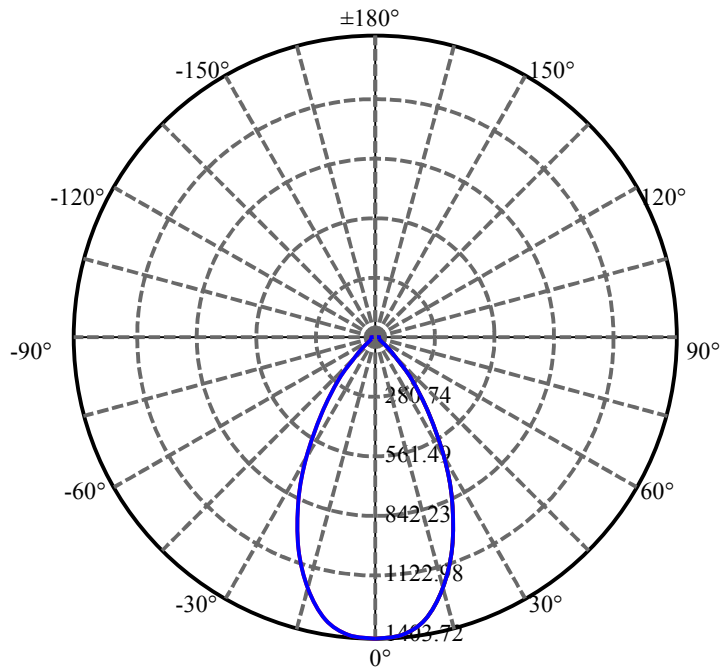
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1403.719	0.000	0	.000%	.000%
5.0	1391.133	33.412	33.412	2.197%	2.490%
10.0	1334.672	97.511	130.922	6.411%	9.755%
15.0	1215.211	151.257	282.18	9.945%	21.026%
20.0	1044.668	186.246	468.425	12.245%	34.904%
25.0	841.099	197.782	666.208	13.003%	49.641%
30.0	647.332	188.362	854.57	12.384%	63.676%
35.0	434.243	159.269	1013.839	10.471%	75.544%
40.0	259.692	115.778	1129.617	7.612%	84.171%
45.0	135.134	73.105	1202.722	4.806%	89.618%
50.0	76.634	42.791	1245.513	2.813%	92.807%
55.0	45.155	26.481	1271.994	1.741%	94.780%
60.0	30.171	17.411	1289.405	1.145%	96.077%
65.0	21.516	12.565	1301.97	.826%	97.013%
70.0	19.167	10.301	1312.271	.677%	97.781%
75.0	18.478	9.840	1322.111	.647%	98.514%
80.0	16.643	9.397	1331.509	.618%	99.214%
85.0	8.184	6.746	1338.255	.444%	99.717%
90.0	5.681	3.797	1342.051	.250%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	854.57	56.18%	63.68%
0-40	1129.62	74.27%	84.17%
0-60	1289.41	84.77%	96.08%
0-90	1338.25	87.99%	99.72%
0-120	1338.25	87.99%	99.72%
0-180	1342.05	88.23%	100.00%
60-90	66.26	4.36%	4.94%
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%
0-37.58	1073.64	70.59%	80.00%

ZONAL LUMEN SUMMARY

0-10	130.92
10-20	337.50
20-30	386.14
30-40	275.05
40-50	115.90
50-60	43.89
60-70	22.87
70-80	19.24
80-90	6.75
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: —————

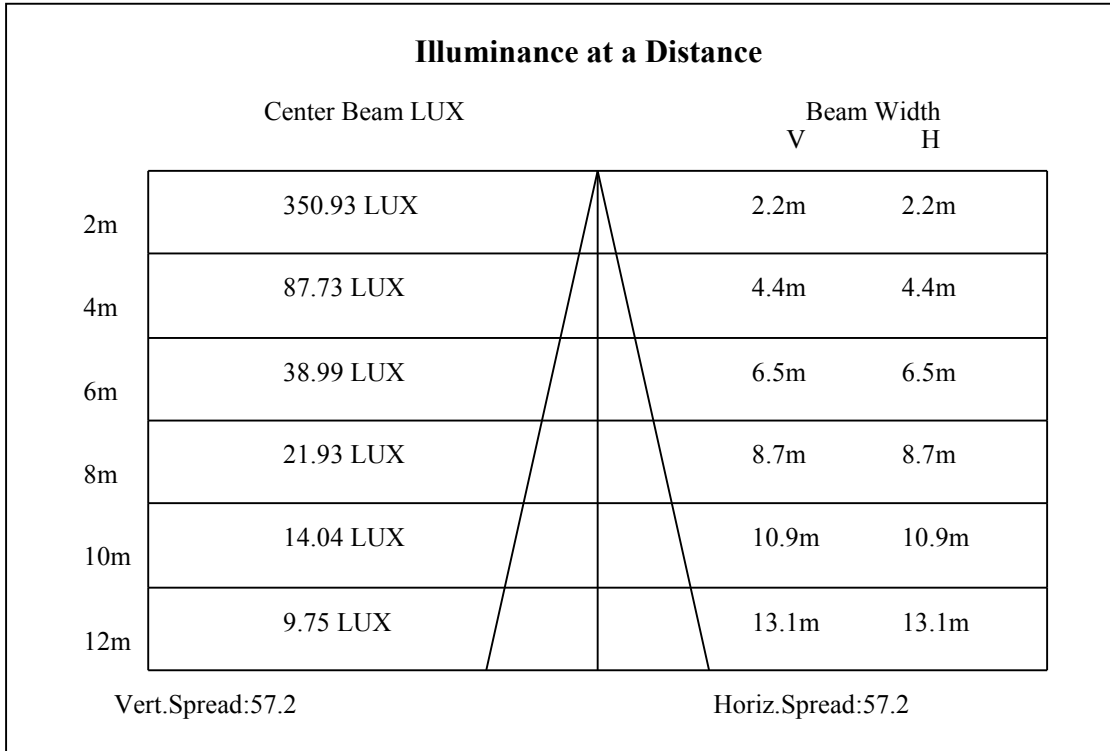
C90/C270: —————

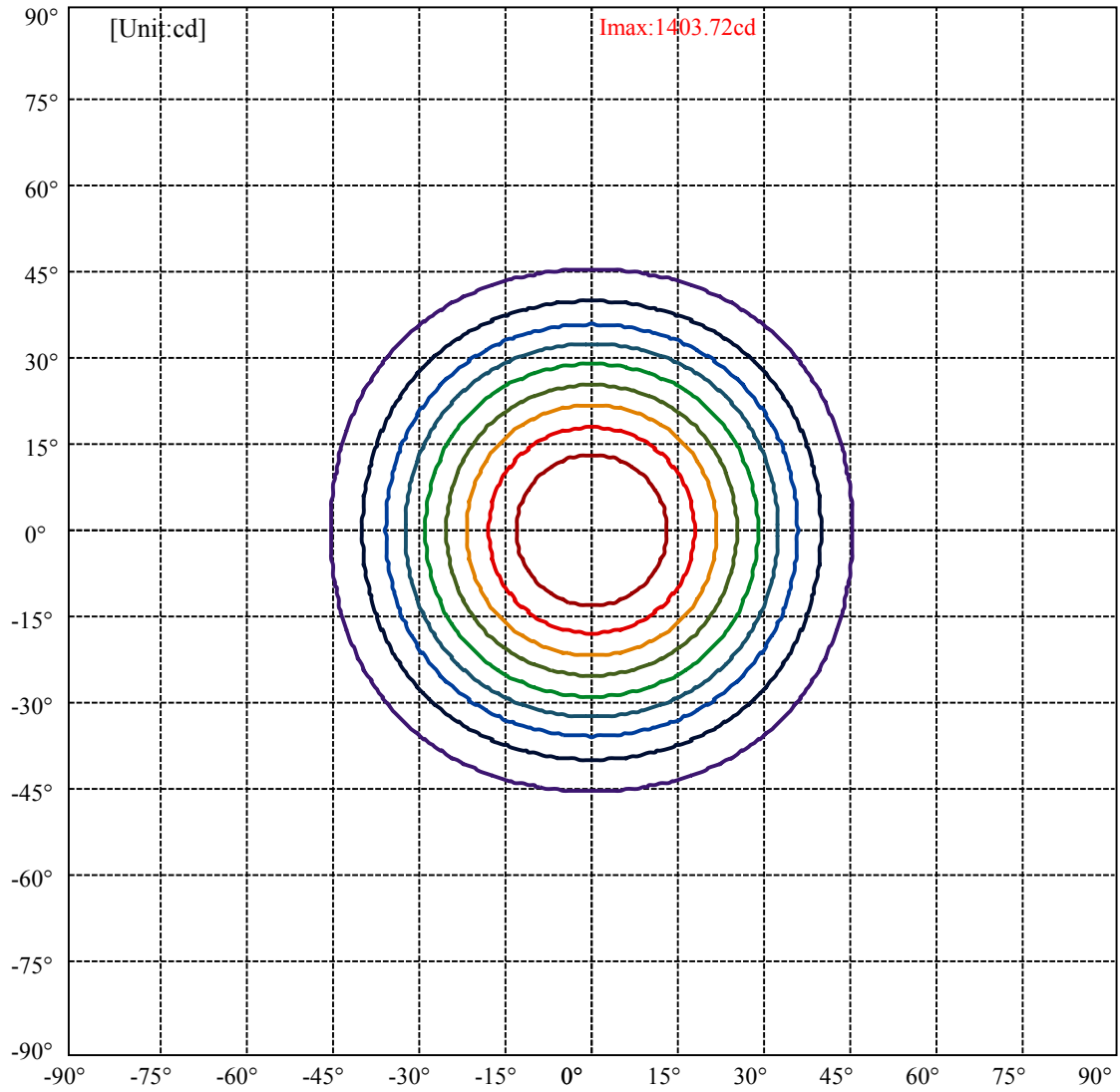
Field angle(10%Imax):C0/180Left:44.8 Right:44.8

:C90/270Left:44.8 Right:44.8

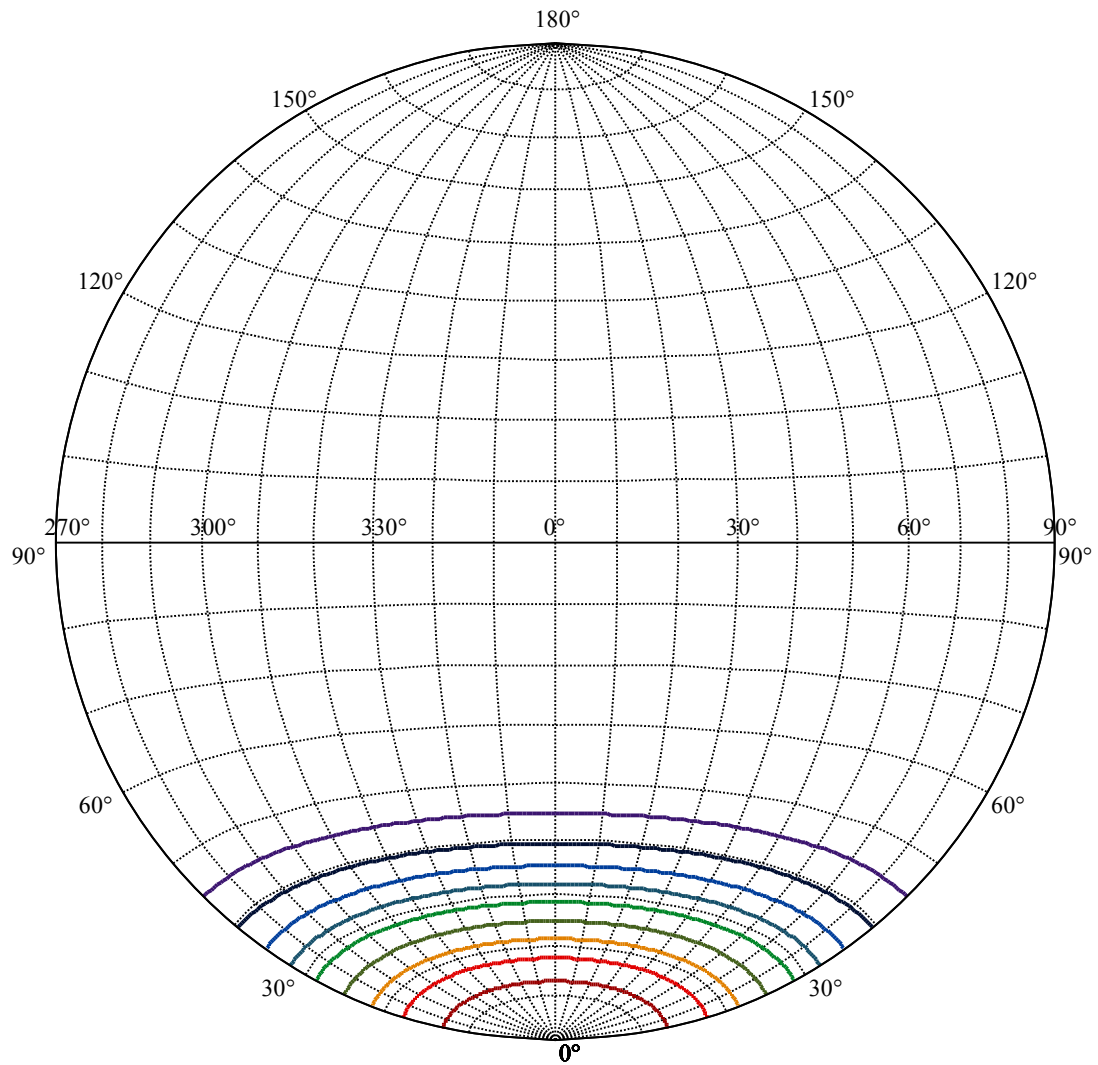
Beam Angle(50%Imax):C0/180Left:28.6 Right:28.6

:C90/270Left:28.6 Right:28.6





(10%Imax) 140.372	—
(20%Imax) 280.744	—
(30%Imax) 421.116	—
(40%Imax) 561.487	—
(50%Imax) 701.859	—
(60%Imax) 842.231	—
(70%Imax) 982.603	—
(80%Imax) 1122.97	—
(90%Imax) 1263.35	—












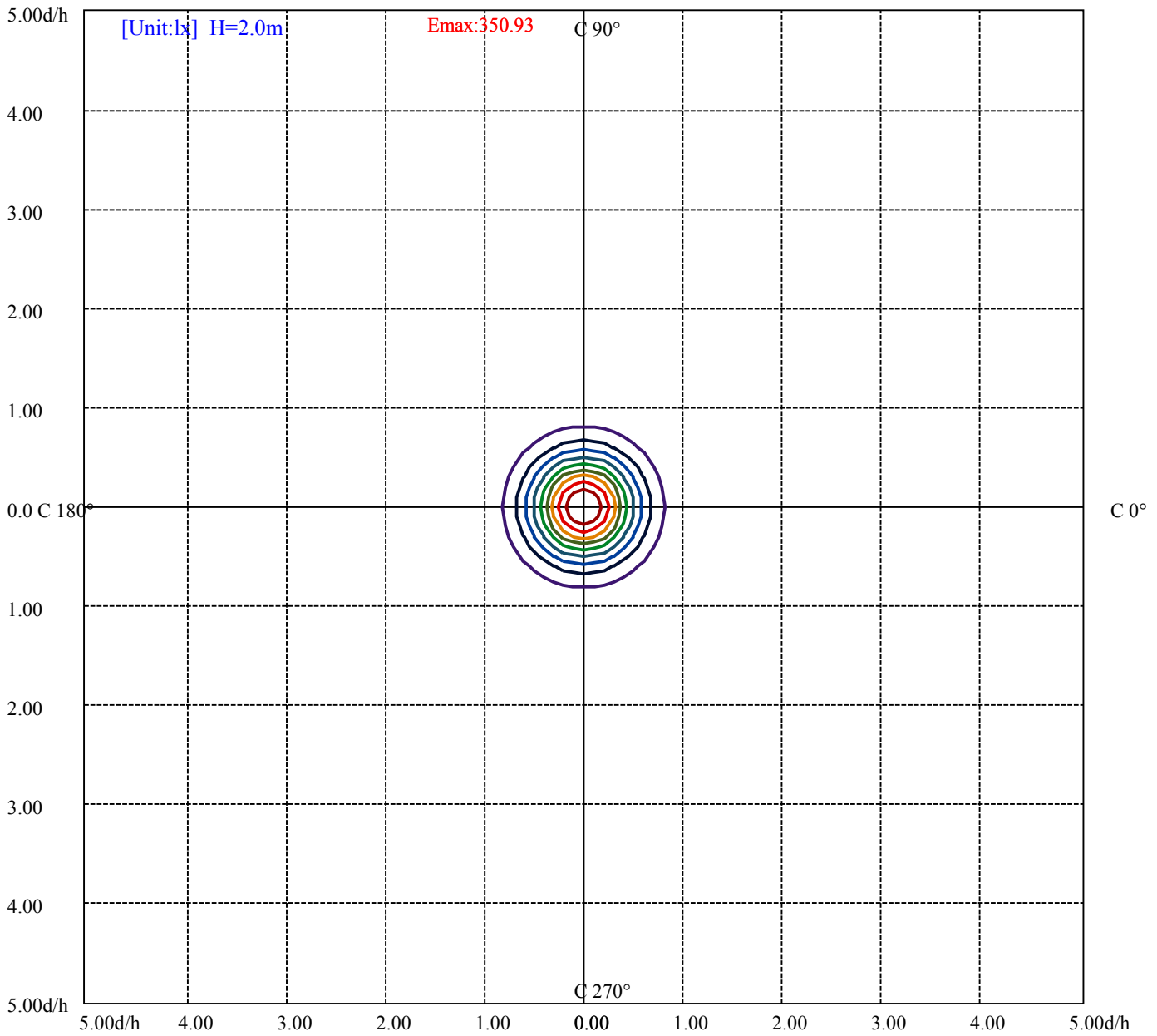
House

[Unit:cd]

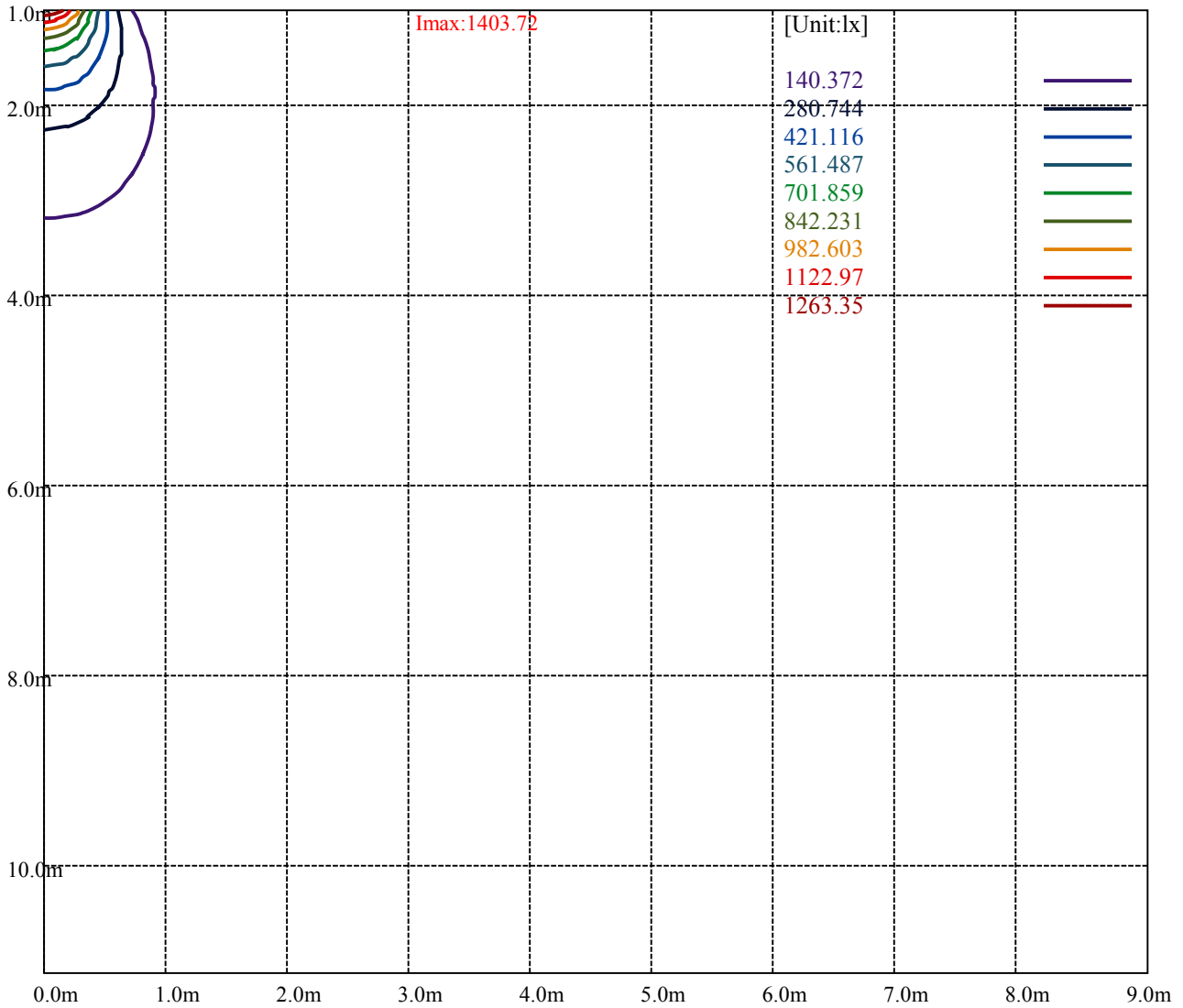
Road

I_{max}:1403.72

(10%I _{max}) 140.372	
(20%I _{max}) 280.744	
(30%I _{max}) 421.116	
(40%I _{max}) 561.487	
(50%I _{max}) 701.859	
(60%I _{max}) 842.231	
(70%I _{max}) 982.603	
(80%I _{max}) 1122.97	
(90%I _{max}) 1263.35	



- (10%Emax) 35.093
- (20%Emax) 70.186
- (30%Emax) 105.279
- (40%Emax) 140.3717
- (50%Emax) 175.4648
- (60%Emax) 210.5578
- (70%Emax) 245.6508
- (80%Emax) 280.7425
- (90%Emax) 315.8375



Luminance Table

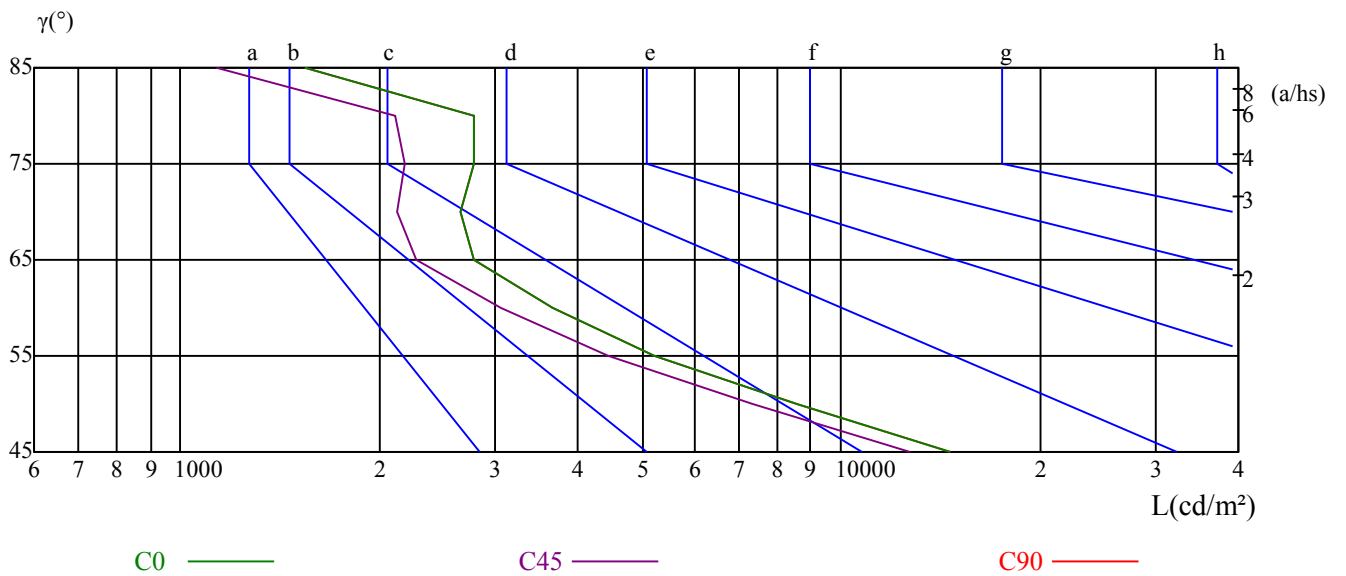
γ	45	50	55	60	65	70	75	80	85
C0	14629	8549	5237	3672	2778	2656	2785	2774	1538
C45	12767	7352	4434	3058	2271	2128	2180	2113	1134
C90	14629	8549	5237	3672	2778	2656	2785	2774	1538

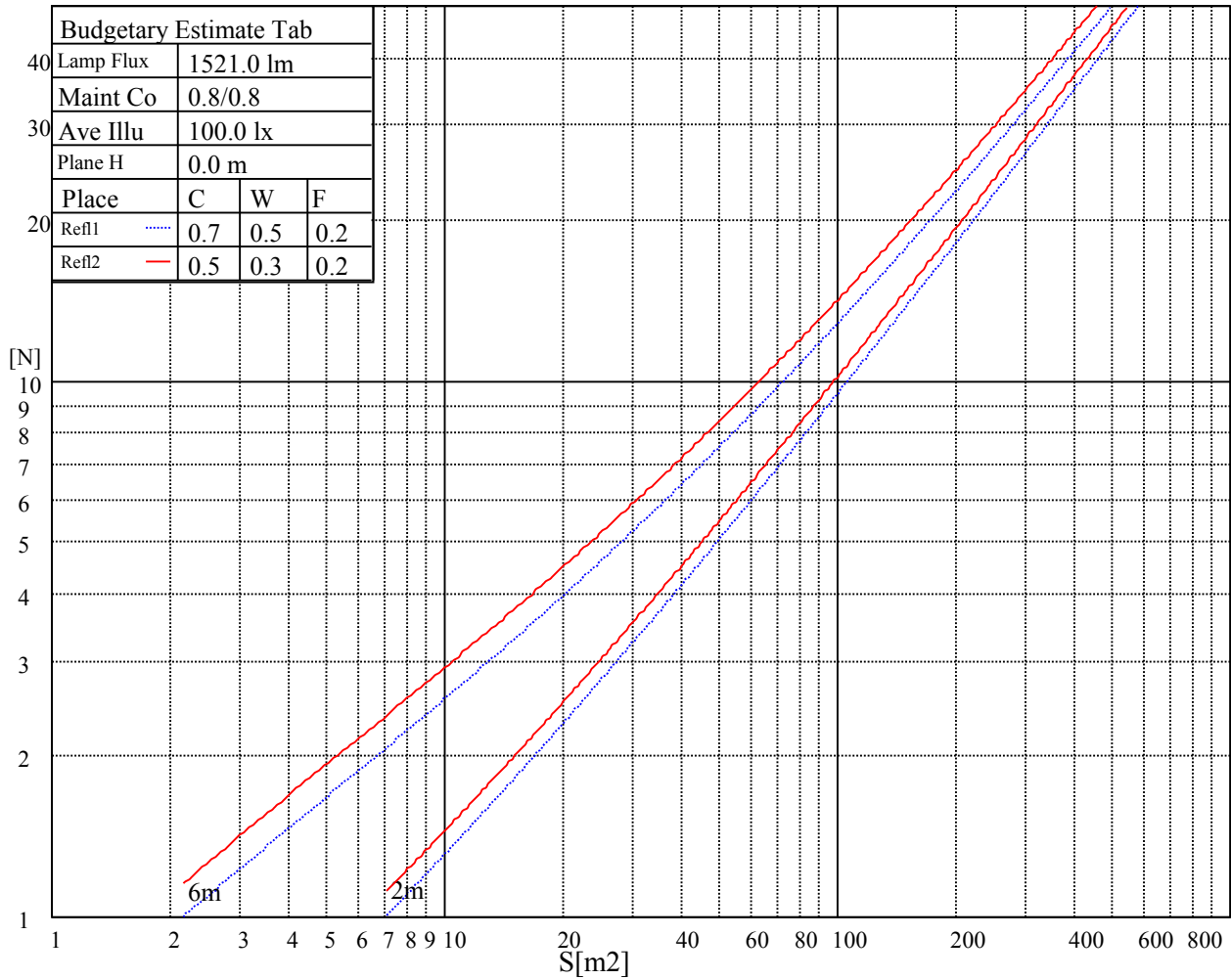
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6015	6015	6015	8435	8435	8435	11095	11095	11095

Glare Table

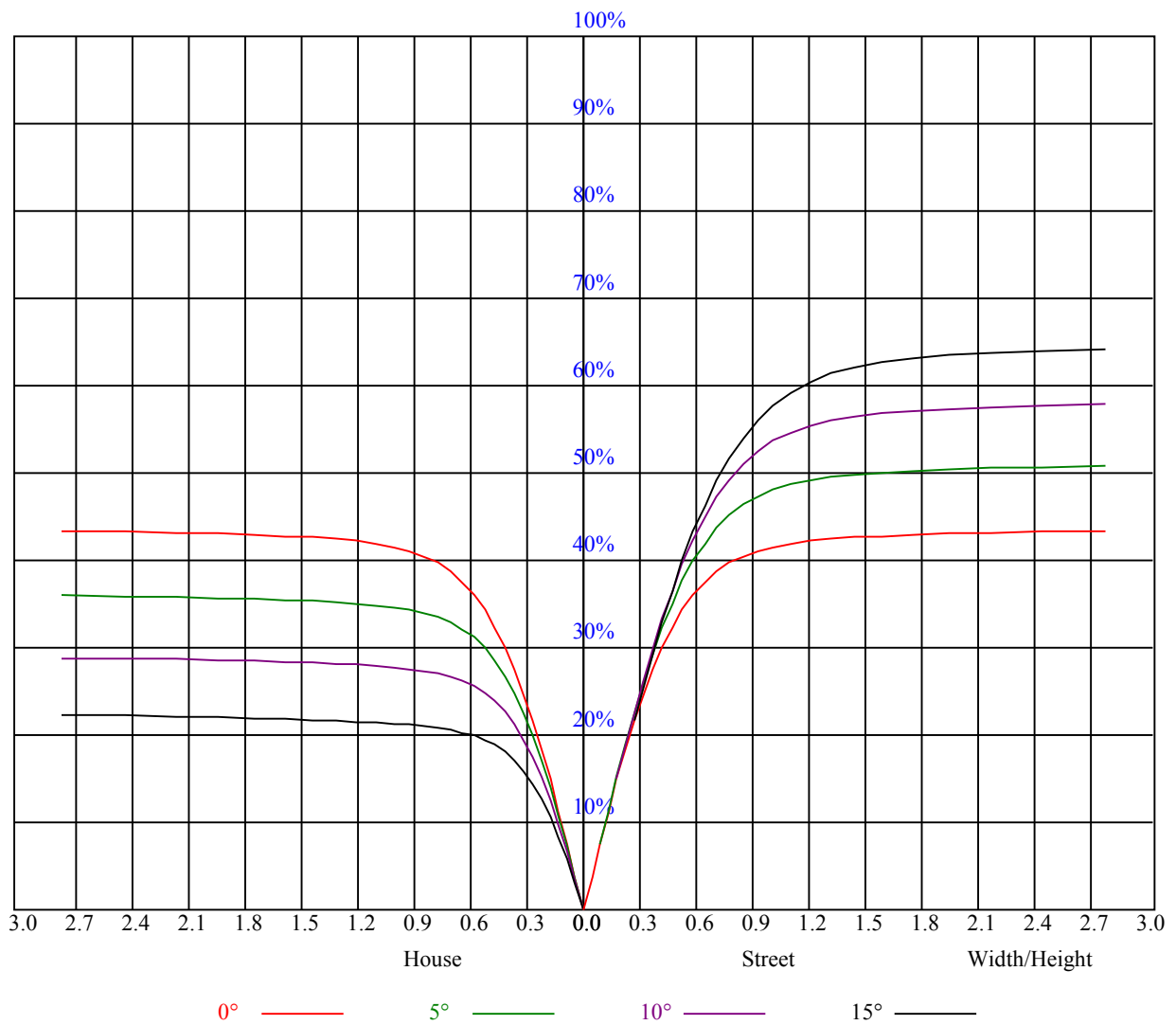
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.05	1.05	1.05	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.88
1	0.97	0.94	0.92	0.95	0.92	0.90	0.91	0.89	0.88	0.88	0.86	0.85	0.85	0.84	0.82	0.81
2	0.89	0.85	0.82	0.87	0.84	0.81	0.85	0.82	0.79	0.82	0.79	0.77	0.79	0.77	0.76	0.74
3	0.82	0.77	0.74	0.81	0.77	0.73	0.79	0.75	0.72	0.76	0.73	0.71	0.74	0.72	0.70	0.68
4	0.76	0.71	0.67	0.75	0.70	0.67	0.73	0.69	0.66	0.72	0.68	0.65	0.70	0.67	0.64	0.63
5	0.71	0.66	0.61	0.70	0.65	0.61	0.69	0.64	0.61	0.67	0.63	0.60	0.66	0.62	0.59	0.58
6	0.66	0.61	0.57	0.66	0.60	0.56	0.64	0.60	0.56	0.63	0.59	0.56	0.62	0.58	0.55	0.54
7	0.62	0.56	0.53	0.62	0.56	0.52	0.60	0.56	0.52	0.59	0.55	0.52	0.58	0.54	0.51	0.50
8	0.58	0.53	0.49	0.58	0.53	0.49	0.57	0.52	0.49	0.56	0.52	0.48	0.55	0.51	0.48	0.47
9	0.55	0.49	0.46	0.55	0.49	0.46	0.54	0.49	0.45	0.53	0.48	0.45	0.52	0.48	0.45	0.44
10	0.52	0.46	0.43	0.51	0.46	0.43	0.51	0.46	0.43	0.50	0.46	0.43	0.49	0.45	0.42	0.41



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	1406.81	1387.69	1336.50	1232.44	1069.31	873.00	698.63	497.25	297.00
45.0	1404.00	1379.81	1316.81	1194.75	1027.13	840.38	645.75	433.69	284.06
90.0	1402.31	1384.31	1319.06	1203.19	1014.08	800.38	601.37	369.17	203.46
135.0	1401.75	1402.31	1346.06	1234.13	1044.56	828.00	613.13	398.81	246.15
180.0	1406.81	1400.63	1342.13	1182.94	1003.28	802.13	595.97	370.01	211.67
225.0	1404.00	1399.50	1339.31	1217.81	1039.33	832.67	645.53	429.19	244.35
270.0	1402.31	1393.31	1352.25	1252.69	1115.44	902.81	712.13	504.56	309.94
315.0	1401.75	1381.50	1325.25	1203.75	1044.23	849.43	666.17	471.26	280.91
360.0	1406.81	1387.69	1336.50	1232.44	1069.31	873.00	698.63	497.25	297.00
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	162.79	90.39	51.58	34.59	23.23	17.72	13.73	10.74	8.21
45.0	135.23	77.01	45.00	30.32	21.38	16.37	12.77	9.96	7.43
90.0	108.96	64.91	39.09	26.66	20.87	30.88	37.86	34.88	6.86
135.0	115.82	68.40	40.78	27.62	20.25	15.69	12.09	9.45	6.64
180.0	113.01	64.86	39.09	27.39	19.91	15.58	12.09	9.34	6.86
225.0	134.27	75.49	44.44	29.76	21.21	16.26	12.60	9.96	7.59
270.0	161.72	88.93	52.03	33.30	23.01	23.63	33.30	38.42	13.78
315.0	149.29	83.08	49.22	31.73	22.28	17.21	13.39	10.41	8.10
360.0	162.79	90.39	51.58	34.59	23.23	17.72	13.73	10.74	8.21
C/γ(°)	90.0								
0.0	5.85								
45.0	5.63								
90.0	5.51								
135.0	5.57								
180.0	5.63								
225.0	5.63								
270.0	5.91								
315.0	5.74								
360.0	5.85								