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Nata

LumCAT: 1437-N
Luminaire: 92.70.064.00+92.70.147.00
Report No: NATA0100
Test No: GC20180712308
LampCAT: CITIZEN CLU028
Lamp flux(lm): 1840.0
Number of Lamps: 1
Length(mm): 46
Phm Type: C

Voltage(V): 36.4000
Current(A): 0.4000
Power (W): 14.5600
PF: 0.0000
Ballast type: DC
Width(mm): 46
Height(mm): 0

Photometric Results

Lumens(lm): 1489.83
Efficiency(%): 80.97%
Lumens(lm)/Power(W): 102.32
Central intensity(cd): 2799.618
Maximum intensity(cd): 2799.618
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=37.9
 [C90/270]Total=37.9
Field angle(10%Imax): [C0/180]Total=69.7
 [C90/270]Total=69.7
Maximum s/h(1/2): C0_180=0.63 C90_270=0.63
Maximum s/h(1/4): C0_180=0.61 C90_270=0.61
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 81.80%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.150%

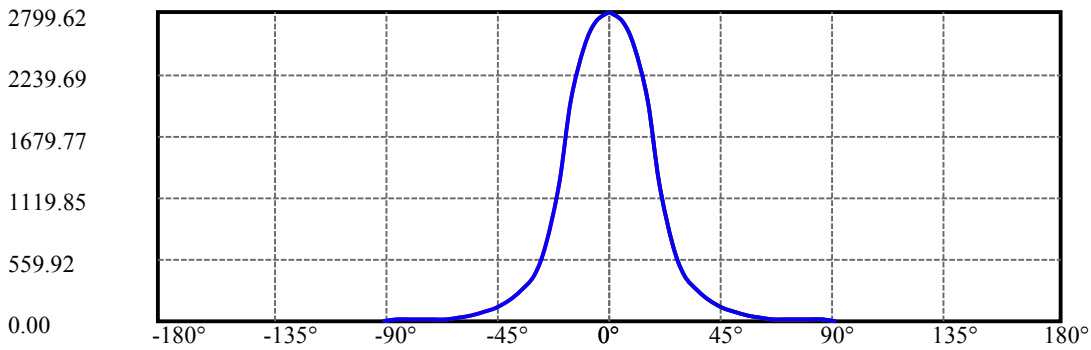
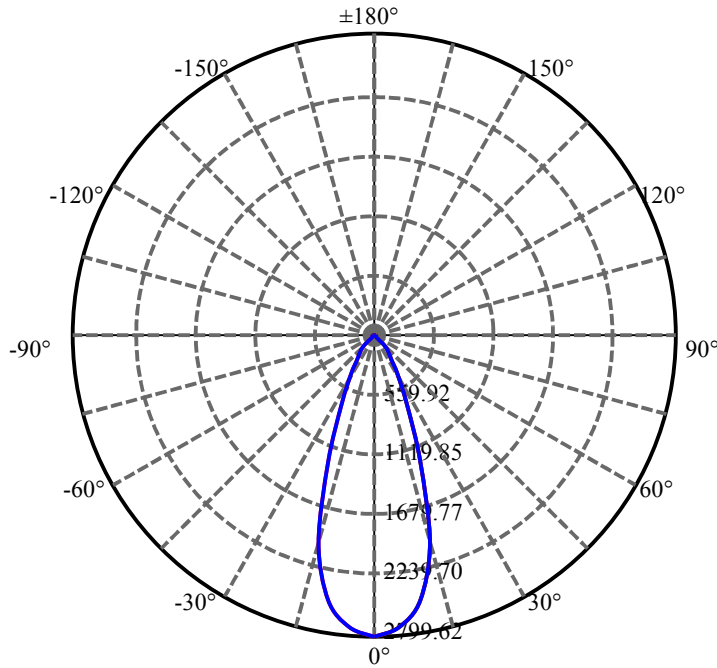
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2799.618	16.742	16.742	.910%	1.124%
5.0	2715.382	129.723	146.465	7.050%	9.831%
10.0	2491.646	237.163	383.628	12.889%	25.750%
15.0	1995.726	283.130	666.758	15.388%	44.754%
20.0	1245.493	233.498	900.256	12.690%	60.427%
25.0	699.560	162.055	1062.311	8.807%	71.304%
30.0	413.749	113.396	1175.706	6.163%	78.916%
35.0	275.344	86.568	1262.274	4.705%	84.726%
40.0	188.603	66.451	1328.726	3.611%	89.187%
45.0	122.315	47.408	1376.134	2.577%	92.369%
50.0	80.809	33.932	1410.065	1.844%	94.646%
55.0	50.666	22.749	1432.814	1.236%	96.173%
60.0	30.295	14.381	1447.195	.782%	97.139%
65.0	18.602	9.241	1456.437	.502%	97.759%
70.0	15.588	8.029	1464.466	.436%	98.298%
75.0	14.583	7.721	1472.187	.420%	98.816%
80.0	14.631	7.898	1480.085	.429%	99.346%
85.0	14.583	7.963	1488.048	.433%	99.881%
90.0	6.490	1.779	1489.827	.097%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1175.71	63.90%	78.92%
0-40	1328.73	72.21%	89.19%
0-60	1447.20	78.65%	97.14%
0-90	1488.05	80.87%	99.88%
0-120	1488.05	80.87%	99.88%
0-180	1489.83	80.97%	100.00%
60-90	55.23	3.00%	3.71%
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%
0-30.93	1191.86	64.78%	80.00%

ZONAL LUMEN SUMMARY

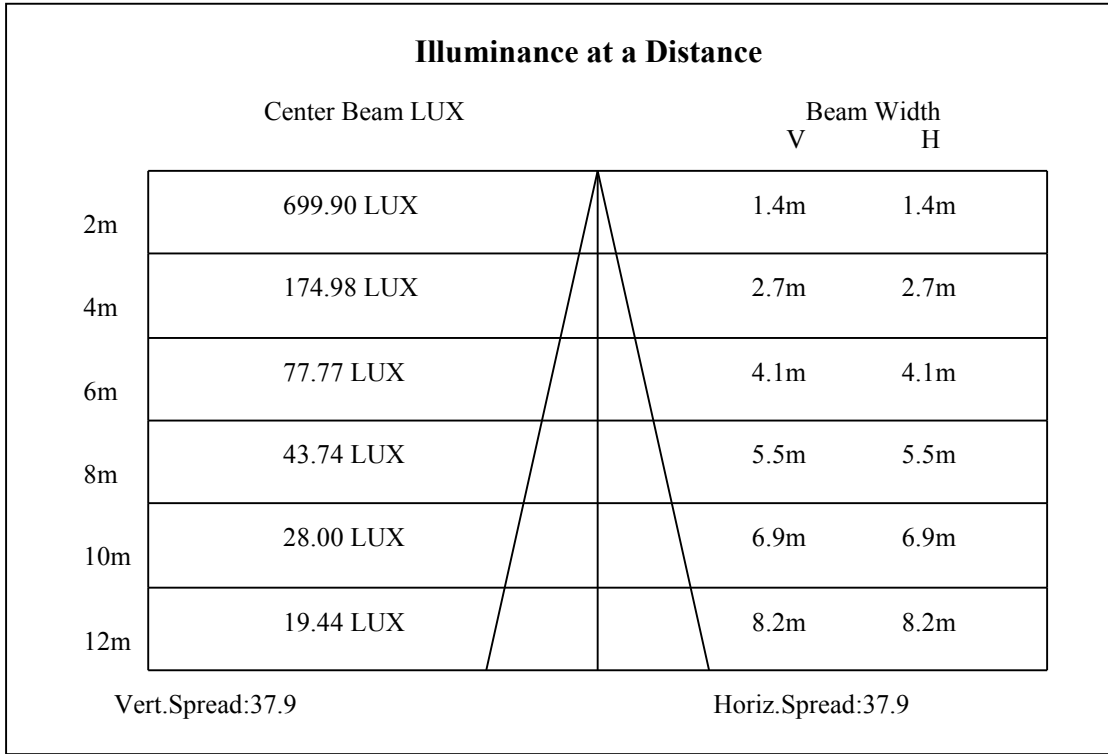
0-10	383.63
10-20	516.63
20-30	275.45
30-40	153.02
40-50	81.34
50-60	37.13
60-70	17.27
70-80	15.62
80-90	7.96
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

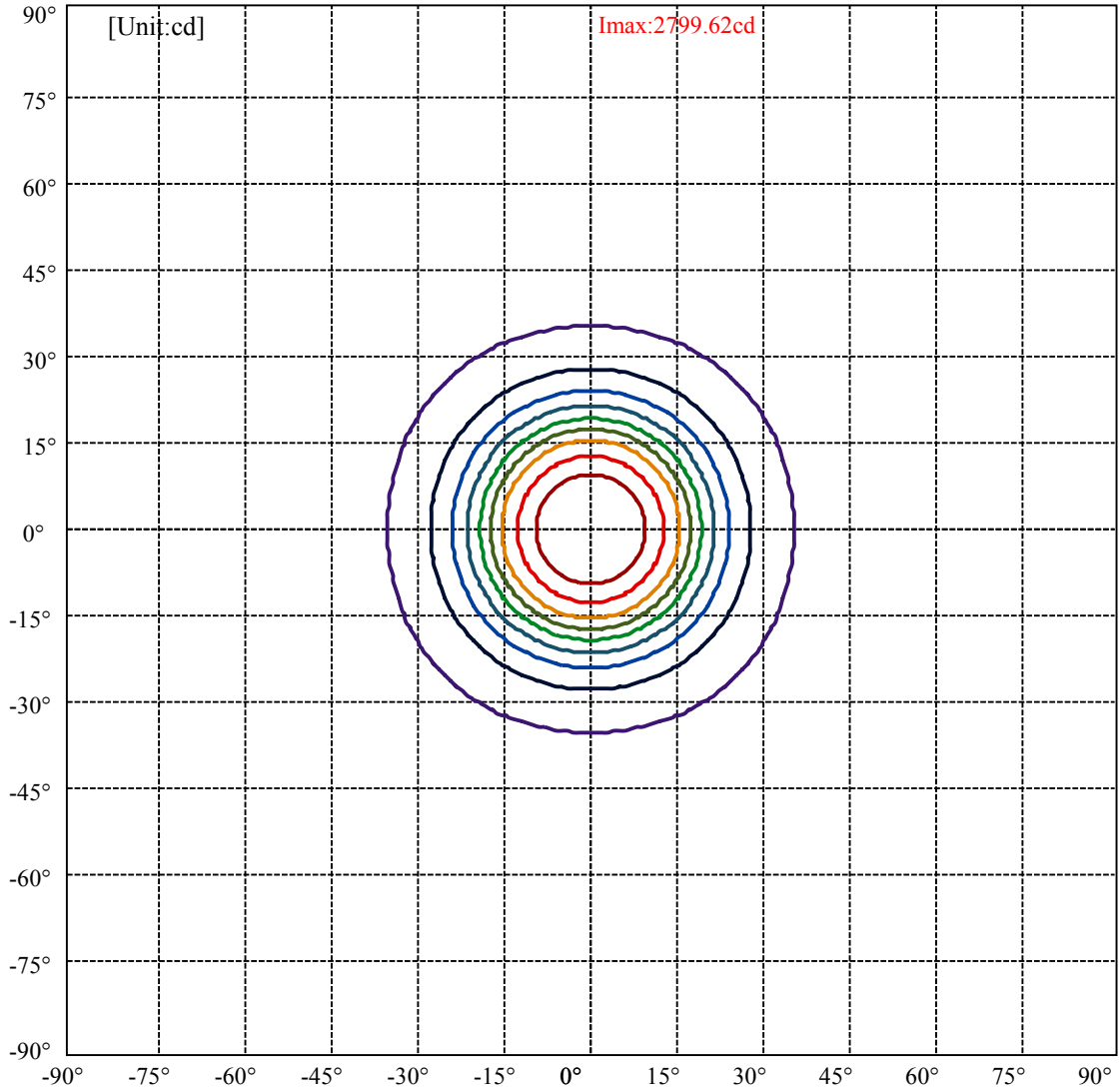


C0(Max): —————
C0/C180: —————
C90/C270: —————

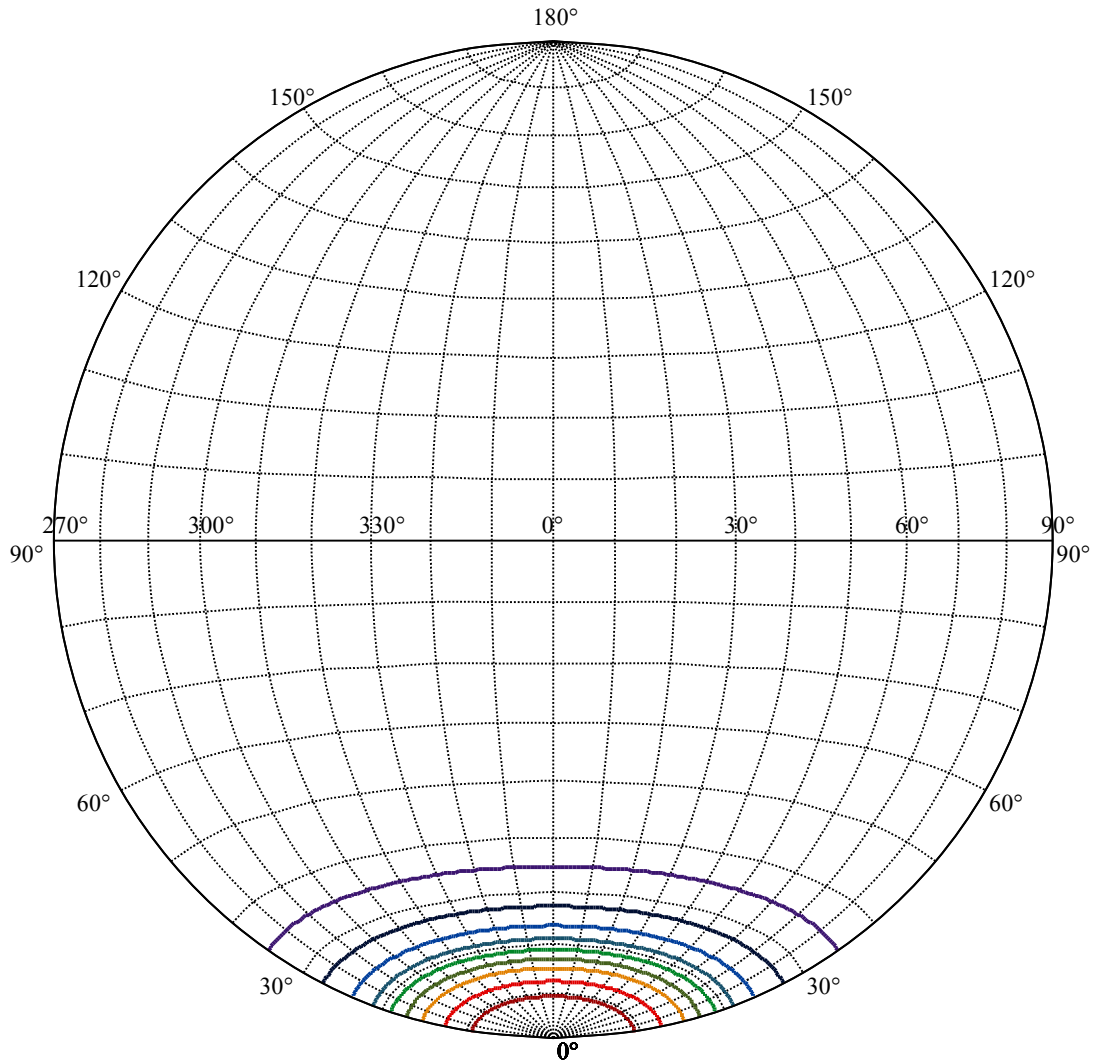
Field angle(10%Imax):C0/180Left:34.8 Right:34.8
:C90/270Left:34.8 Right:34.8

Beam Angle(50%Imax):C0/180Left:19.0 Right:19.0
:C90/270Left:19.0 Right:19.0





(10%Imax) 279.962	—
(20%Imax) 559.924	—
(30%Imax) 839.885	—
(40%Imax) 1119.85	—
(50%Imax) 1399.81	—
(60%Imax) 1679.77	—
(70%Imax) 1959.73	—
(80%Imax) 2239.69	—
(90%Imax) 2519.66	—



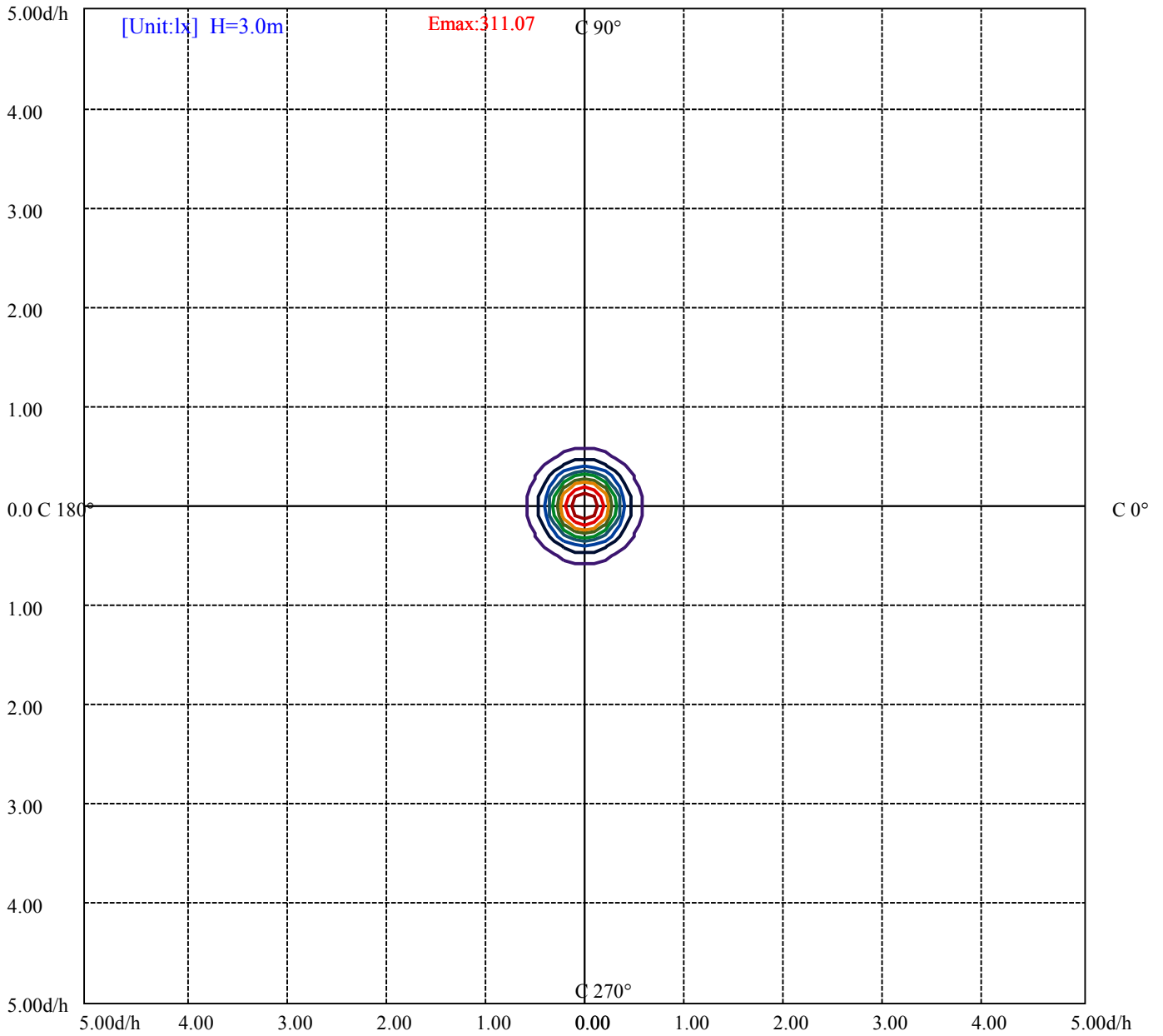
House

[Unit:cd]

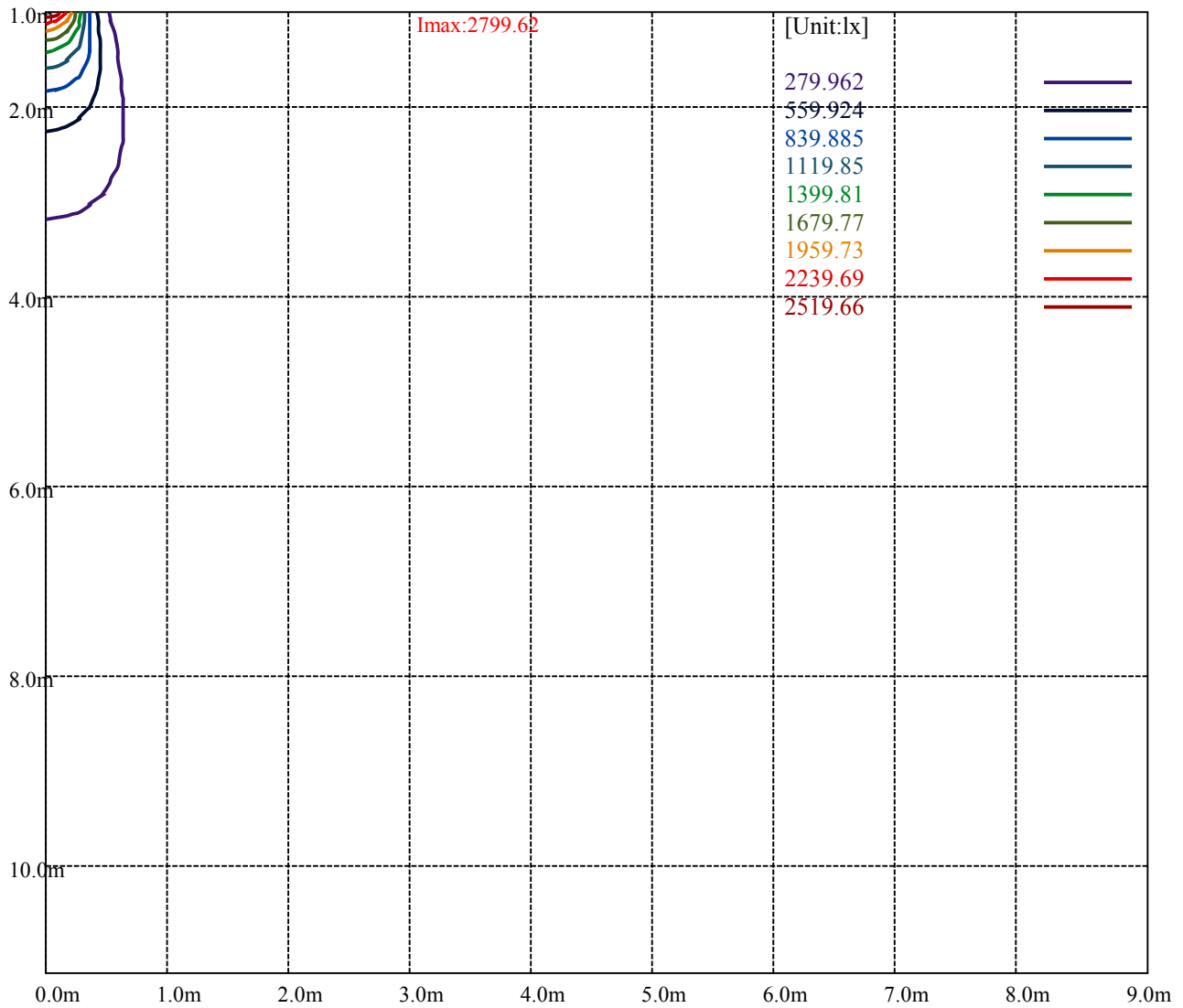
Road

Imax:2799.62

(10%Imax)	279.962	—
(20%Imax)	559.924	—
(30%Imax)	839.885	—
(40%Imax)	1119.85	—
(50%Imax)	1399.81	—
(60%Imax)	1679.77	—
(70%Imax)	1959.73	—
(80%Imax)	2239.69	—
(90%Imax)	2519.66	—



- (10%Emax) 31.10689
- (20%Emax) 62.21367
- (30%Emax) 93.32056
- (40%Emax) 124.4278
- (50%Emax) 155.5345
- (60%Emax) 186.6411
- (70%Emax) 217.7478
- (80%Emax) 248.8544
- (90%Emax) 279.9611



Luminance Table

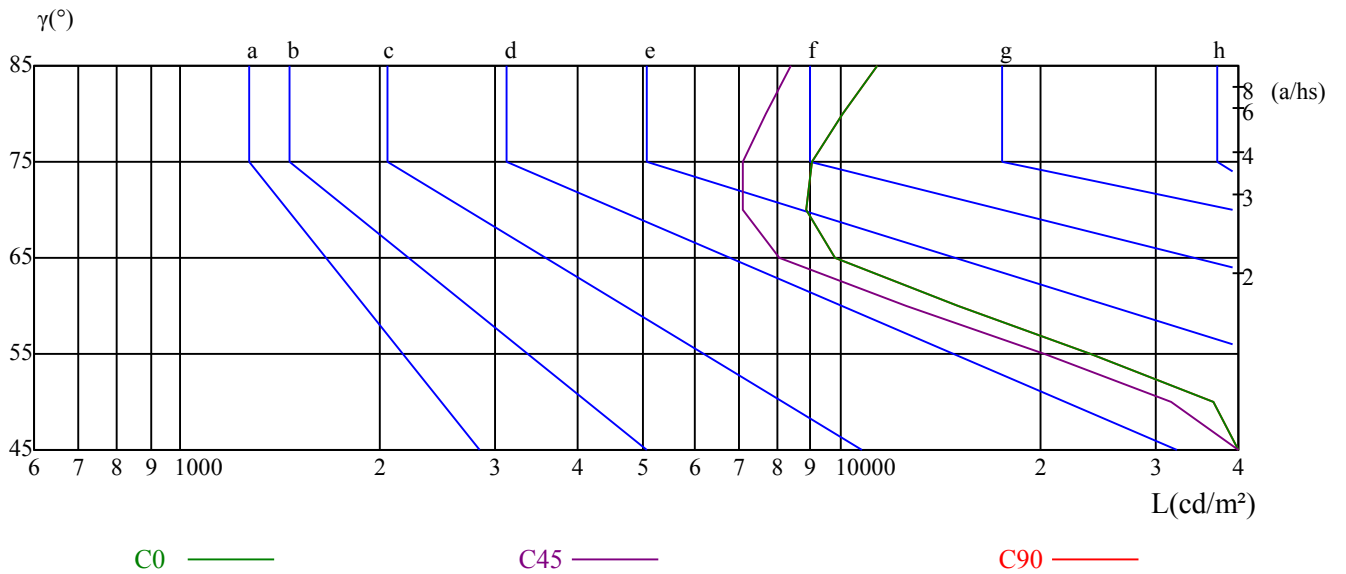
γ	45	50	55	60	65	70	75	80	85
C0	53720	36634	23921	15041	9817	8851	9035	10058	11356
C45	47040	31613	20326	12570	8055	7115	7094	7680	8382
C90	53720	36634	23921	15041	9817	8851	9035	10058	11356

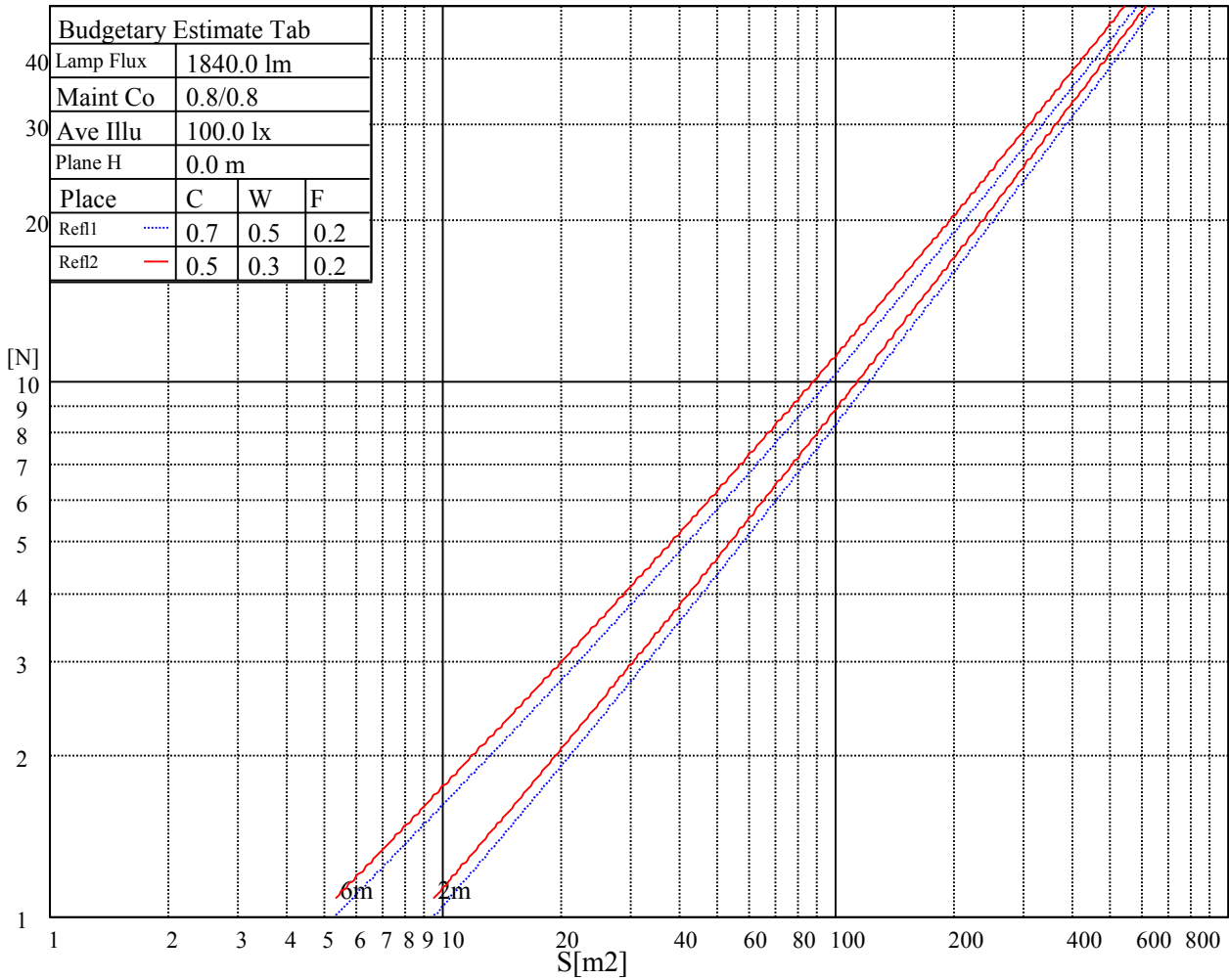
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
20802	20802	20802	26628	26628	26628	79075	79075	79075

Glare Table

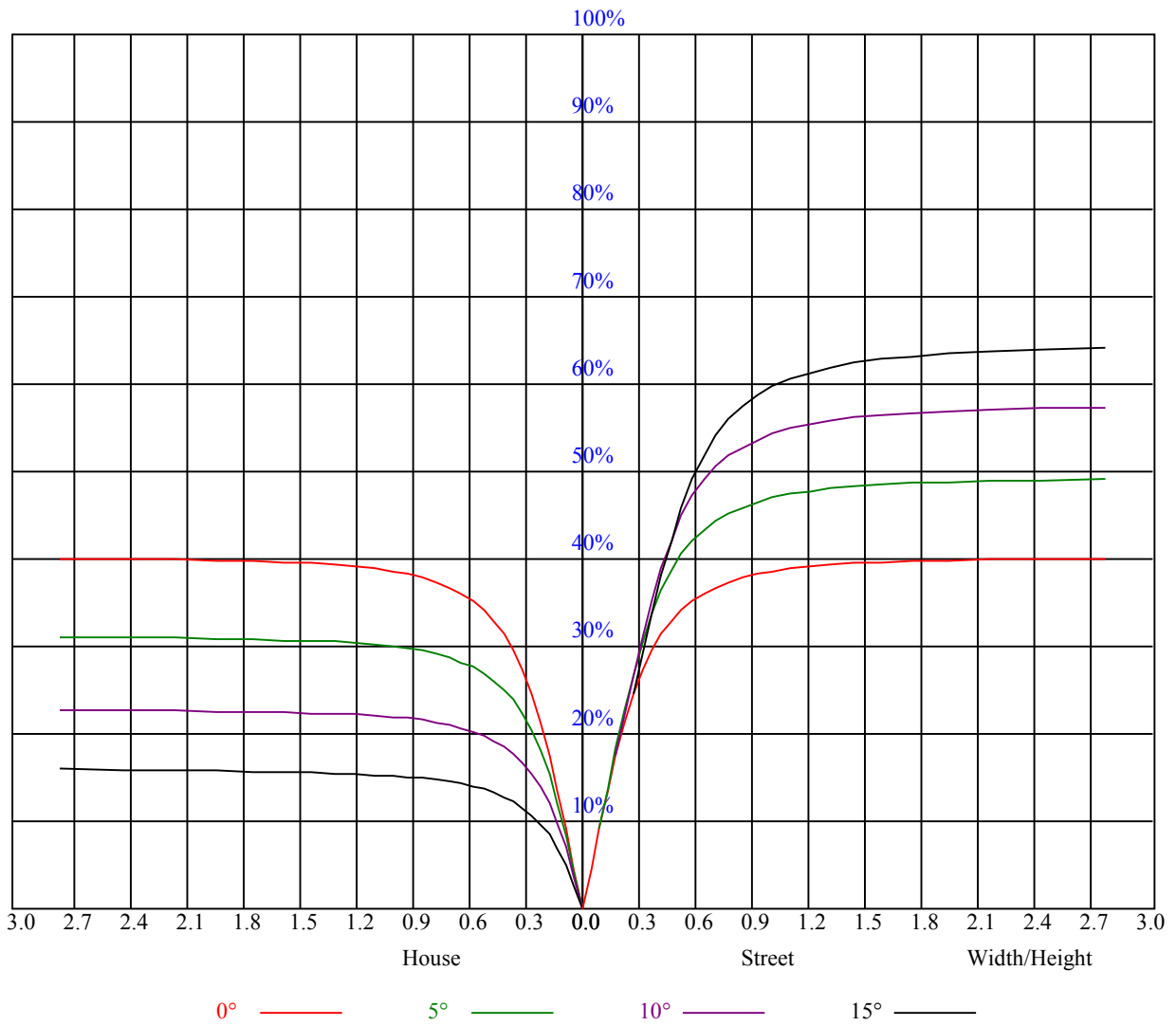
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.97	0.97	0.97	0.95	0.95	0.95	0.91	0.91	0.91	0.87	0.87	0.87	0.83	0.83	0.83	0.82
1	0.90	0.87	0.85	0.88	0.86	0.84	0.85	0.83	0.81	0.81	0.80	0.79	0.79	0.78	0.77	0.75
2	0.84	0.81	0.78	0.83	0.79	0.77	0.80	0.77	0.75	0.77	0.75	0.74	0.75	0.74	0.72	0.71
3	0.79	0.75	0.72	0.78	0.74	0.71	0.76	0.73	0.70	0.74	0.71	0.69	0.72	0.70	0.68	0.67
4	0.75	0.70	0.67	0.74	0.70	0.67	0.72	0.69	0.66	0.70	0.68	0.65	0.69	0.66	0.64	0.63
5	0.71	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.62	0.67	0.64	0.62	0.66	0.63	0.61	0.60
6	0.68	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.58	0.57
7	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.56	0.62	0.59	0.56	0.61	0.58	0.56	0.55
8	0.62	0.57	0.54	0.61	0.57	0.54	0.60	0.57	0.54	0.60	0.56	0.54	0.59	0.56	0.54	0.53
9	0.59	0.55	0.52	0.59	0.55	0.52	0.58	0.54	0.52	0.57	0.54	0.52	0.57	0.54	0.52	0.51
10	0.57	0.53	0.50	0.57	0.53	0.50	0.56	0.52	0.50	0.55	0.52	0.50	0.55	0.52	0.50	0.49



Intensity data(cd)

C/\u03b3(\u00b0)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	2799.07	2746.21	2570.03	2161.51	1585.62	856.68	478.44	311.07	218.41
45.0	2790.26	2720.89	2481.94	2052.50	1332.36	718.49	419.53	282.44	193.41
90.0	2804.02	2718.69	2479.74	1903.30	1079.38	628.03	383.03	256.51	178.16
135.0	2805.12	2736.30	2545.26	1999.65	1261.89	680.50	400.26	279.14	185.32
180.0	2799.07	2682.90	2376.23	1810.25	1096.67	569.94	360.01	241.81	166.00
225.0	2790.26	2672.44	2405.41	1860.91	1070.52	639.15	381.27	255.63	173.26
270.0	2804.02	2720.89	2529.84	2116.37	1441.93	779.60	455.32	292.90	198.48
315.0	2805.12	2724.74	2544.71	2061.31	1095.57	724.10	432.14	283.27	195.78
360.0	2799.07	2746.21	2570.03	2161.51	1585.62	856.68	478.44	311.07	218.41
C/\u03b3(\u00b0)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	145.02	96.73	62.38	37.66	21.31	16.90	15.69	14.42	14.09
45.0	124.04	84.51	52.80	32.21	20.81	17.29	16.52	17.18	16.63
90.0	113.80	74.82	47.02	27.64	17.29	15.20	14.59	14.48	14.53
135.0	117.22	77.19	48.01	29.62	17.89	15.09	14.15	14.65	14.70
180.0	110.06	74.60	45.20	25.55	17.34	15.31	14.59	14.81	12.66
225.0	111.93	72.34	46.19	26.59	17.78	15.31	14.31	15.14	16.13
270.0	130.32	84.46	52.52	32.04	18.33	15.03	13.43	13.21	14.53
315.0	126.13	81.81	51.20	31.05	18.06	14.59	13.38	13.16	13.38
360.0	145.02	96.73	62.38	37.66	21.31	16.90	15.69	14.42	14.09
C/\u03b3(\u00b0)	90.0								
0.0	6.66								
45.0	6.50								
90.0	6.33								
135.0	6.39								
180.0	6.50								
225.0	6.50								
270.0	6.55								
315.0	6.50								
360.0	6.66								