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NATA

LumCAT: 3-2439-A
Luminaire: 92.70.151.00+92.70.153.00
Report No: NATA0100
Test No: GC2020011308
LampCAT: CITIZEN LCN-C03A
Lamp flux(lm): 2216.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 33.8800
Current(A): 0.4970
Power (W): 16.8000
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 1862.80
Efficiency(%): 84.06%
Lumens(lm)/Power(W): 110.88
Central intensity(cd): 3316.078
Maximum intensity(cd): 3316.078
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=40.3
 [C90/270]Total=40.3
Field angle(10%Imax): [C0/180]Total=75.7
 [C90/270]Total=75.7
Maximum s/h(1/2): C0_180=0.65 C90_270=0.65
Maximum s/h(1/4): C0_180=0.66 C90_270=0.66
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 84.06%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.413%

Zonal flux distribution table

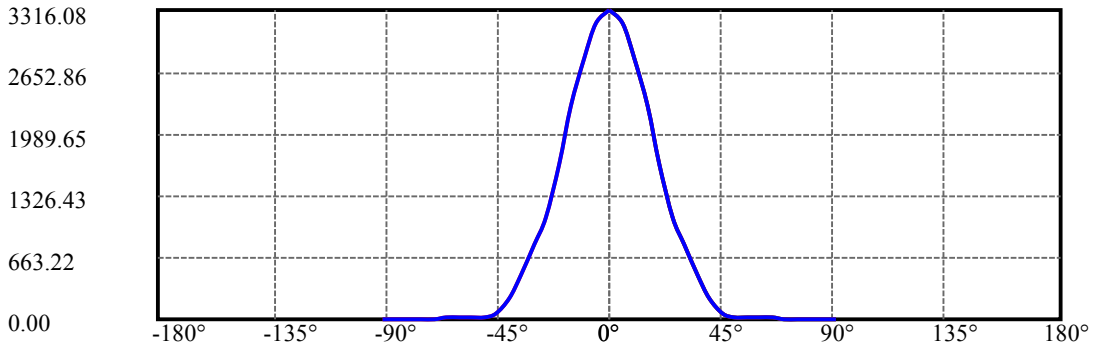
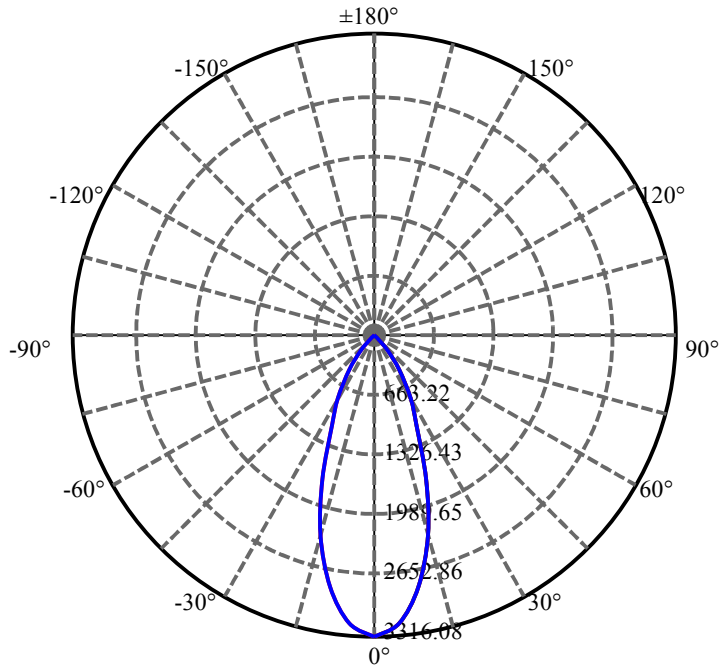
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3316.078	0.000	0	.000%	.000%
5.0	3175.734	77.608	77.608	3.502%	4.166%
10.0	2810.953	214.163	291.77	9.664%	15.663%
15.0	2281.500	302.081	593.851	13.632%	31.880%
20.0	1676.180	326.168	920.02	14.719%	49.389%
25.0	1098.591	291.022	1211.042	13.133%	65.012%
30.0	793.547	239.452	1450.494	10.806%	77.866%
35.0	473.252	186.545	1637.039	8.418%	87.881%
40.0	226.807	116.800	1753.838	5.271%	94.151%
45.0	56.784	52.509	1806.347	2.370%	96.970%
50.0	16.952	14.900	1821.247	.672%	97.769%
55.0	12.684	6.444	1827.691	.291%	98.115%
60.0	11.278	5.539	1833.23	.250%	98.413%
65.0	10.336	5.254	1838.484	.237%	98.695%
70.0	9.745	5.085	1843.569	.229%	98.968%
75.0	9.295	4.977	1848.546	.225%	99.235%
80.0	9.000	4.895	1853.441	.221%	99.498%
85.0	8.663	4.799	1858.241	.217%	99.755%
90.0	7.988	4.559	1862.799	.206%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1450.49	65.46%	77.87%
0-40	1753.84	79.14%	94.15%
0-60	1833.23	82.73%	98.41%
0-90	1858.24	83.86%	99.76%
0-120	1858.24	83.86%	99.76%
0-180	1862.80	84.06%	100.00%
60-90	30.55	1.38%	1.64%
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%
0-31.07	1490.24	67.25%	80.00%

ZONAL LUMEN SUMMARY

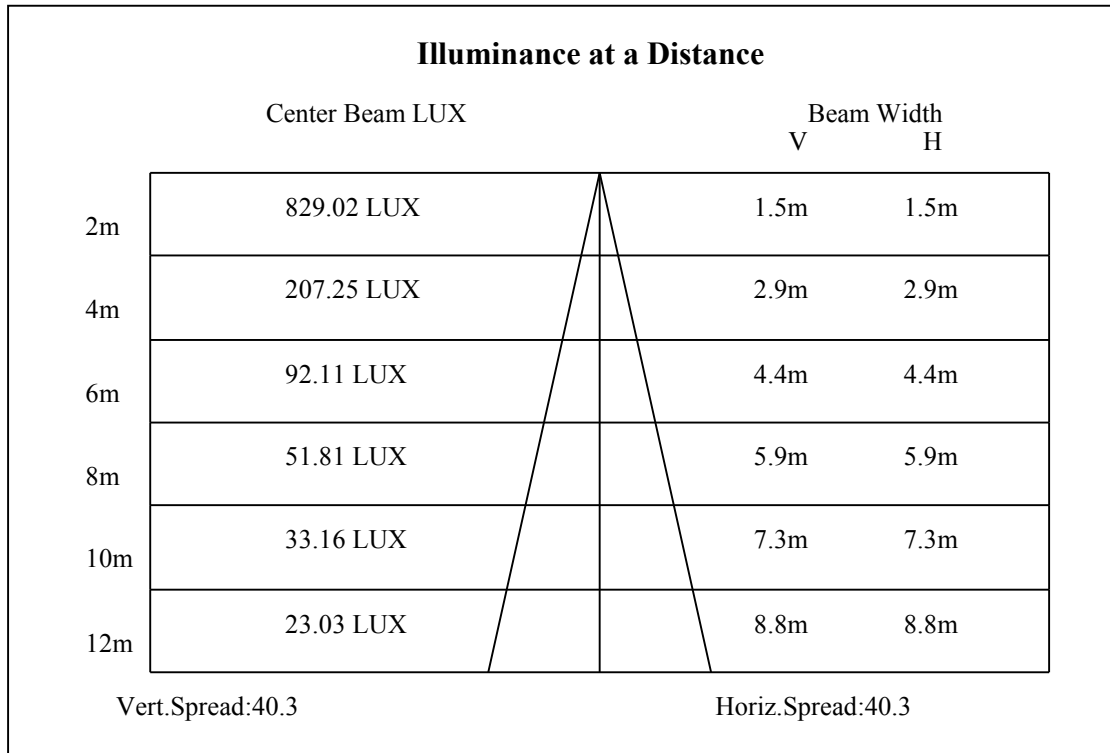
0-10	291.77
10-20	628.25
20-30	530.47
30-40	303.34
40-50	67.41
50-60	11.98
60-70	10.34
70-80	9.87
80-90	4.80
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

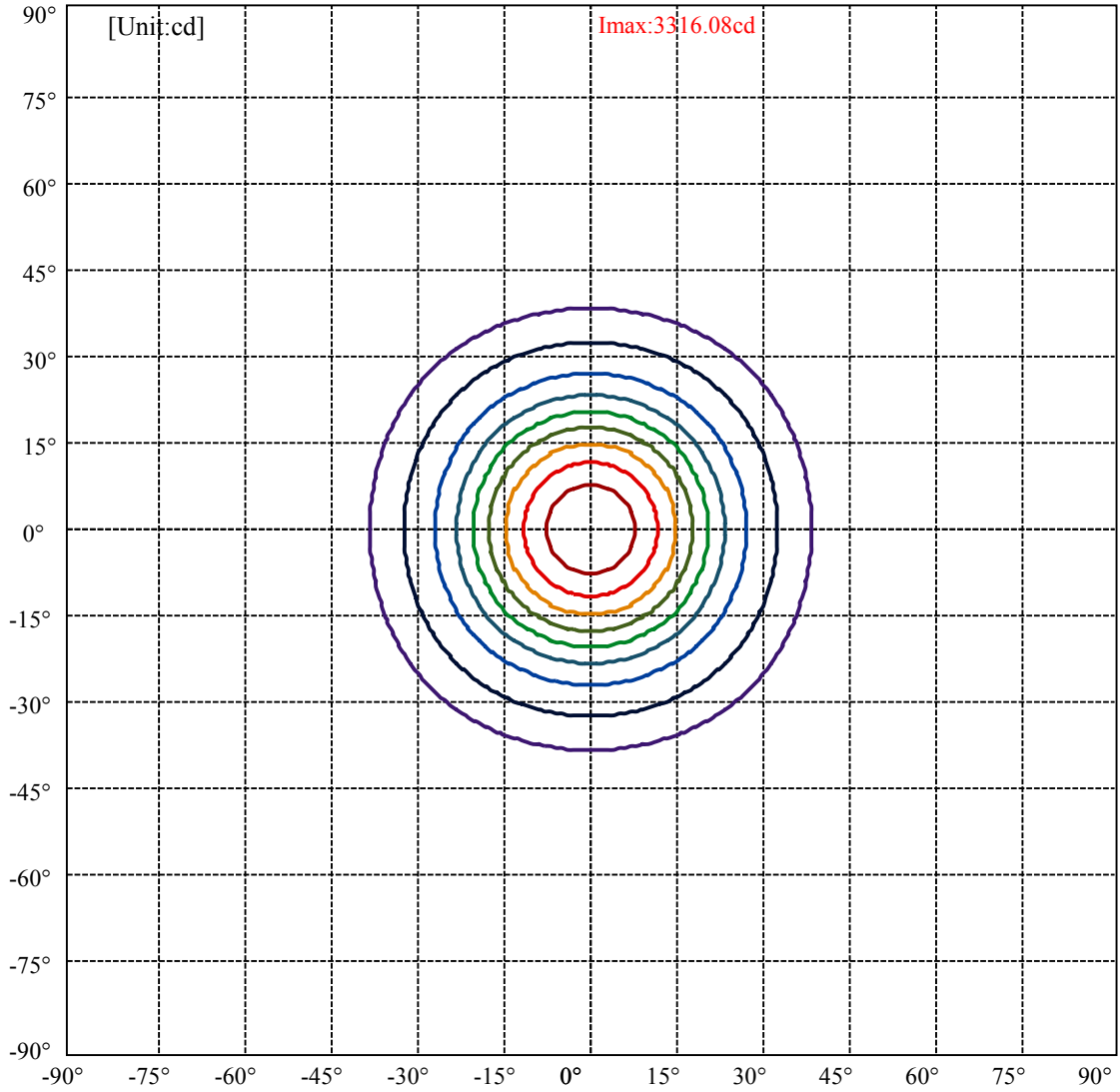


C0(Max): —————
C0/C180: —————
C90/C270: —————

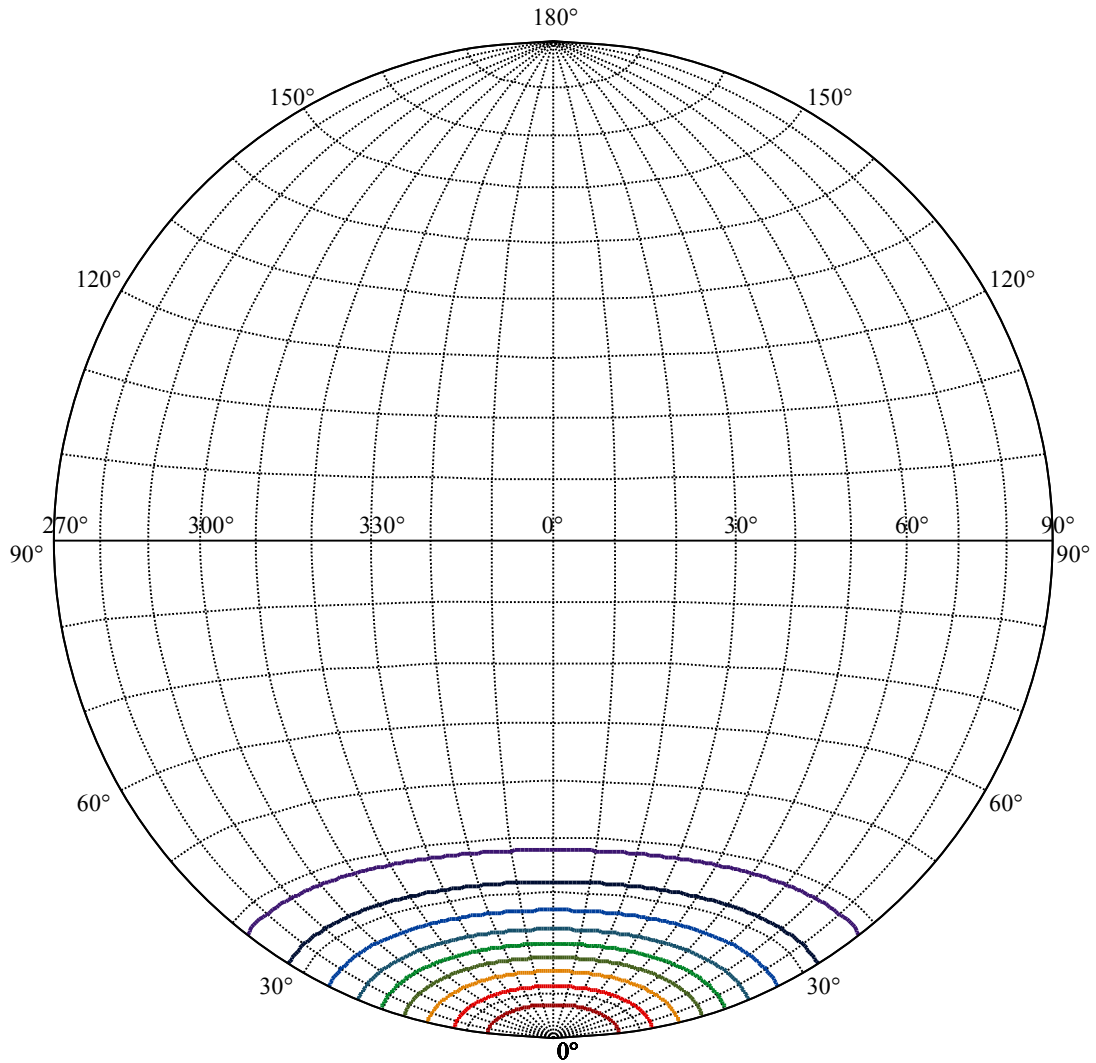
Field angle(10%Imax):C0/180Left:37.9 Right:37.9
:C90/270Left:37.9 Right:37.9

Beam Angle(50%Imax):C0/180Left:20.2 Right:20.2
:C90/270Left:20.2 Right:20.2





(10%Imax) 331.608	—
(20%Imax) 663.216	—
(30%Imax) 994.823	—
(40%Imax) 1326.43	—
(50%Imax) 1658.04	—
(60%Imax) 1989.65	—
(70%Imax) 2321.25	—
(80%Imax) 2652.86	—
(90%Imax) 2984.47	—



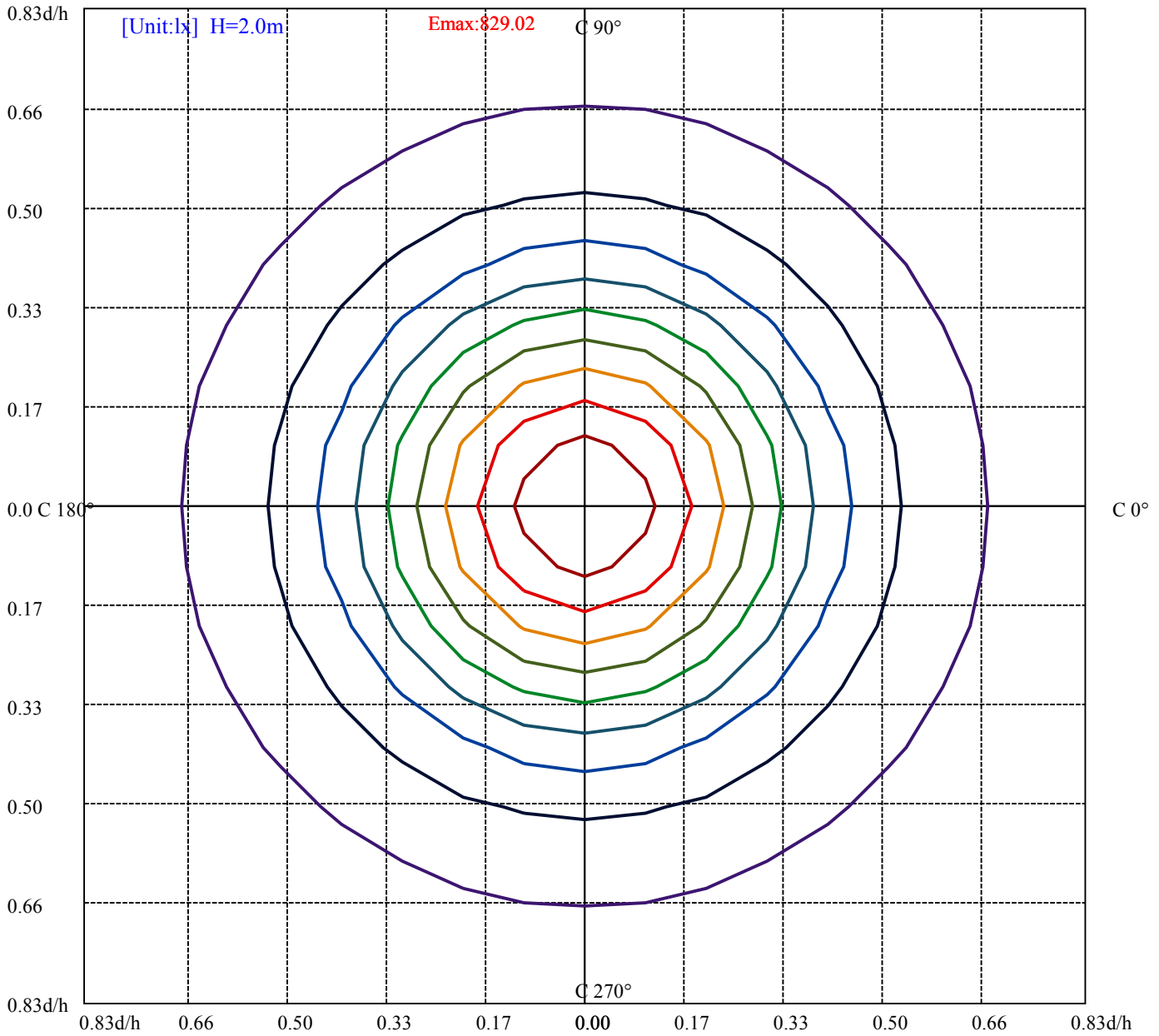
House

[Unit:cd]

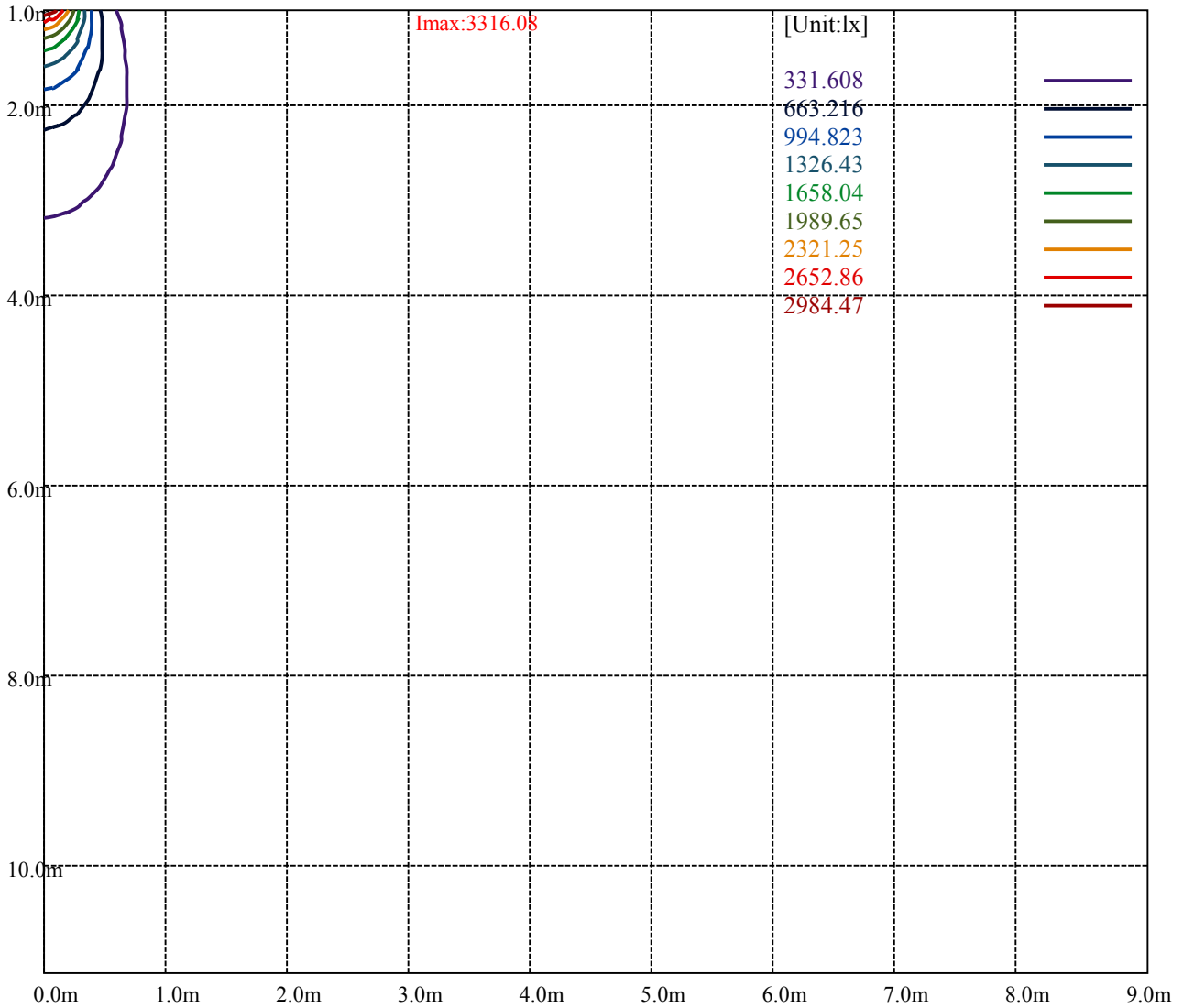
Road

Imax:3316.08

(10%Imax) 331.608	—
(20%Imax) 663.216	—
(30%Imax) 994.823	—
(40%Imax) 1326.43	—
(50%Imax) 1658.04	—
(60%Imax) 1989.65	—
(70%Imax) 2321.25	—
(80%Imax) 2652.86	—
(90%Imax) 2984.47	—



(10%Emax) 82.90175	—
(20%Emax) 165.8038	—
(30%Emax) 248.7055	—
(40%Emax) 331.6075	—
(50%Emax) 414.51	—
(60%Emax) 497.41	—
(70%Emax) 580.3125	—
(80%Emax) 663.215	—
(90%Emax) 746.1175	—



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

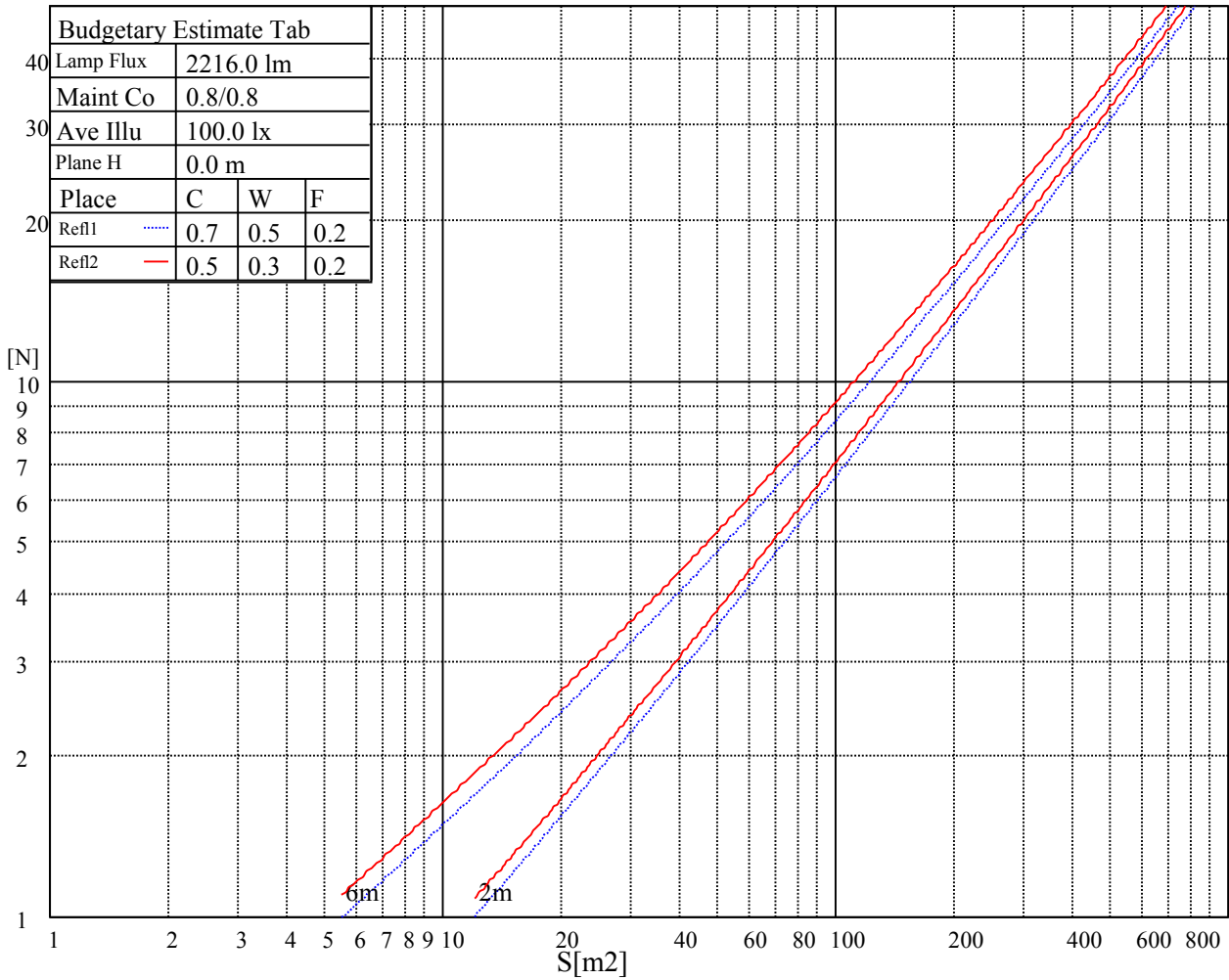
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

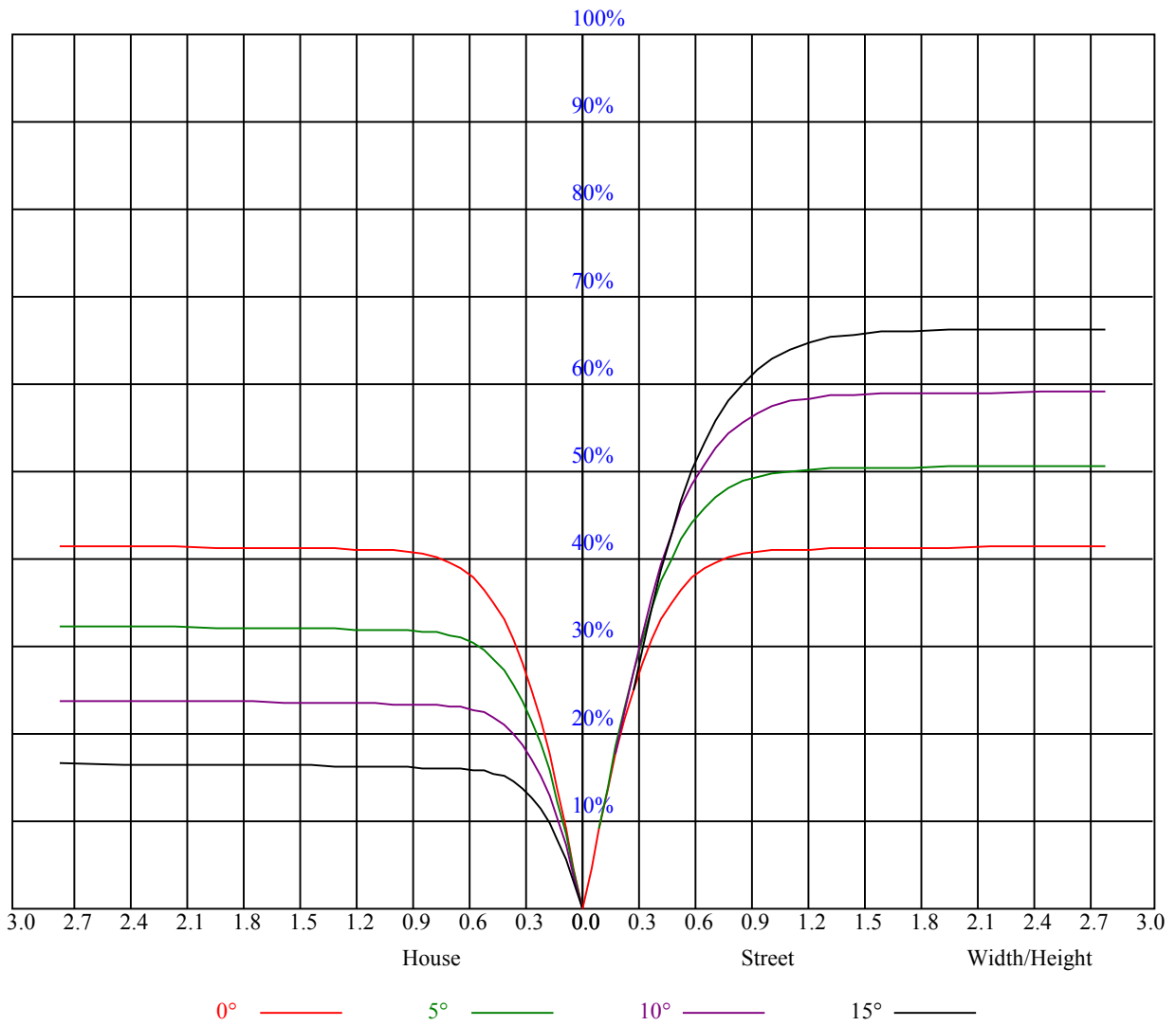
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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 RHOFC=20 CU															
0	1.00	1.00	1.00	0.98	0.98	0.98	0.93	0.93	0.93	0.89	0.89	0.89	0.86	0.86	0.86	0.84
1	0.93	0.91	0.89	0.91	0.90	0.88	0.88	0.87	0.85	0.85	0.84	0.83	0.82	0.81	0.80	0.79
2	0.87	0.84	0.81	0.86	0.83	0.80	0.83	0.81	0.79	0.81	0.79	0.77	0.78	0.77	0.75	0.74
3	0.82	0.78	0.75	0.81	0.77	0.74	0.79	0.76	0.73	0.77	0.74	0.72	0.75	0.73	0.71	0.69
4	0.77	0.73	0.69	0.76	0.72	0.69	0.74	0.71	0.68	0.73	0.70	0.67	0.71	0.69	0.67	0.65
5	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.62
6	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.59	0.58
7	0.65	0.61	0.57	0.65	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.56	0.55
8	0.62	0.57	0.54	0.62	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.54	0.59	0.56	0.53	0.52
9	0.59	0.54	0.51	0.59	0.54	0.51	0.58	0.54	0.51	0.57	0.54	0.51	0.56	0.53	0.51	0.50
10	0.56	0.52	0.49	0.56	0.52	0.49	0.55	0.51	0.49	0.55	0.51	0.48	0.54	0.51	0.48	0.47



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	3325.50	3103.31	2649.94	2118.38	1562.63	1015.88	722.25	379.69	164.70
45.0	3326.63	3123.56	2730.94	2190.94	1642.50	1082.81	777.94	432.00	222.92
90.0	3310.88	3161.81	2778.75	2230.88	1632.94	1099.13	781.65	449.61	189.17
135.0	3301.31	3268.69	2977.88	2506.50	1855.69	1295.44	875.25	582.75	296.44
180.0	3325.50	3257.44	2950.88	2466.56	1815.19	1113.75	861.69	564.08	278.61
225.0	3326.63	3256.31	2927.25	2386.13	1775.81	1113.08	828.28	527.63	241.31
270.0	3310.88	3201.75	2856.94	2340.56	1719.00	1130.63	817.31	500.63	294.19
315.0	3301.31	3033.00	2615.06	2012.06	1405.69	938.03	684.00	349.65	127.13
360.0	3325.50	3103.31	2649.94	2118.38	1562.63	1015.88	722.25	379.69	164.70
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	45.62	16.93	13.44	11.64	10.46	9.73	9.23	8.89	8.38
45.0	50.29	15.81	12.38	11.08	10.24	9.56	9.06	8.66	8.44
90.0	50.74	15.86	12.43	11.14	10.18	9.56	9.11	8.72	8.44
135.0	89.10	22.28	13.67	11.93	10.80	10.18	9.73	9.45	9.17
180.0	67.95	18.79	12.77	11.25	10.41	9.84	9.39	9.11	8.72
225.0	59.01	15.47	12.04	10.86	10.01	9.51	9.06	8.78	8.55
270.0	56.70	15.08	11.98	10.91	10.07	9.56	9.06	8.78	8.55
315.0	34.88	15.41	12.77	11.42	10.52	10.01	9.73	9.62	9.06
360.0	45.62	16.93	13.44	11.64	10.46	9.73	9.23	8.89	8.38
C/ γ (°)	90.0								
0.0	7.93								
45.0	7.99								
90.0	7.99								
135.0	8.04								
180.0	7.99								
225.0	8.04								
270.0	7.99								
315.0	7.93								
360.0	7.93								