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## Nata

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LumCAT: 2-2214-L	
Luminaire: 92.70.131.00	
Report No: 200417-B001	Voltage(V): 36.4300
Test No: 200417-C001	Current(A): 0.5500
LampCAT: CITIZEN CLU038	Power (W): 20.0370
Lamp flux(lm): 2427.1	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

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## Photometric Results

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Lumens(lm): 2331.34  
Efficiency(%): 96.05%  
Lumens(lm)/Power(W): 116.35  
Central intensity(cd): 2778.188  
Maximum intensity(cd): 2778.188  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=56.7  
                                  [C90/270]Total=56.7  
Field angle(10%Imax): [C0/180]Total=80.6  
                                  [C90/270]Total=80.6  
Maximum s/h(1/2): C0\_180=0.89 C90\_270=0.89  
Maximum s/h(1/4): C0\_180=0.85 C90\_270=0.85  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 96.05%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 97.964%

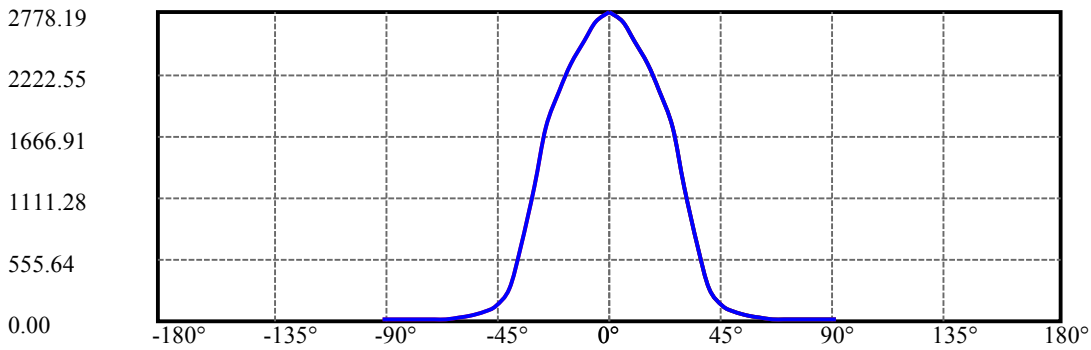
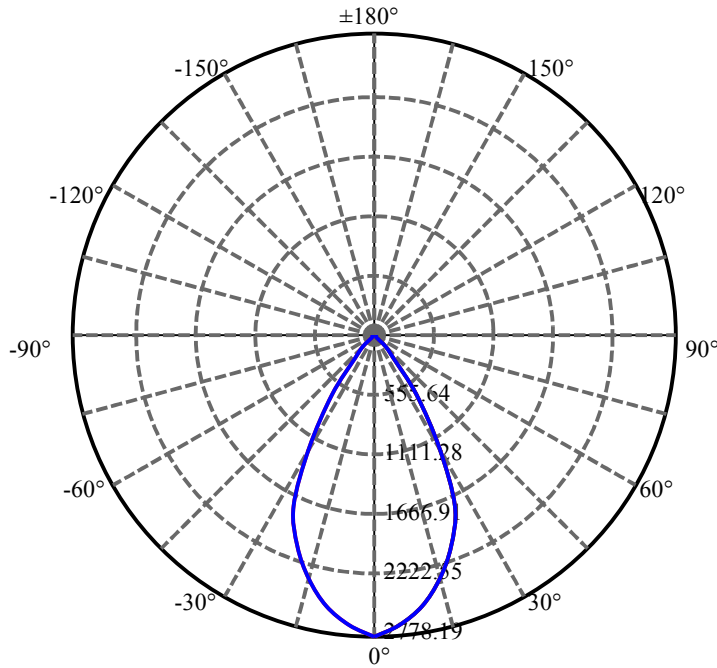
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2778.188	0.000	0	.000%	.000%
5.0	2685.445	65.316	65.316	2.691%	2.802%
10.0	2526.047	186.431	251.748	7.681%	10.798%
15.0	2317.641	287.324	539.072	11.838%	23.123%
20.0	2069.367	361.551	900.623	14.896%	38.631%
25.0	1744.453	399.999	1300.622	16.481%	55.789%
30.0	1212.729	374.234	1674.856	15.419%	71.841%
35.0	679.655	278.667	1953.523	11.481%	83.794%
40.0	286.861	161.256	2114.779	6.644%	90.711%
45.0	141.539	79.322	2194.101	3.268%	94.113%
50.0	79.369	44.638	2238.738	1.839%	96.028%
55.0	46.659	27.403	2266.141	1.129%	97.204%
60.0	29.988	17.717	2283.858	.730%	97.963%
65.0	20.123	12.182	2296.04	.502%	98.486%
70.0	15.701	9.071	2305.111	.374%	98.875%
75.0	13.226	7.561	2312.672	.312%	99.199%
80.0	12.298	6.829	2319.501	.281%	99.492%
85.0	10.702	6.249	2325.751	.257%	99.760%
90.0	9.696	5.585	2331.336	.230%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1674.86	69.01%	71.84%
0-40	2114.78	87.13%	90.71%
0-60	2283.86	94.10%	97.96%
0-90	2325.75	95.82%	99.76%
0-120	2325.75	95.82%	99.76%
0-180	2331.34	96.05%	100.00%
60-90	59.61	2.46%	2.56%
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%
0-33.41	1865.07	76.84%	80.00%

ZONAL LUMEN SUMMARY

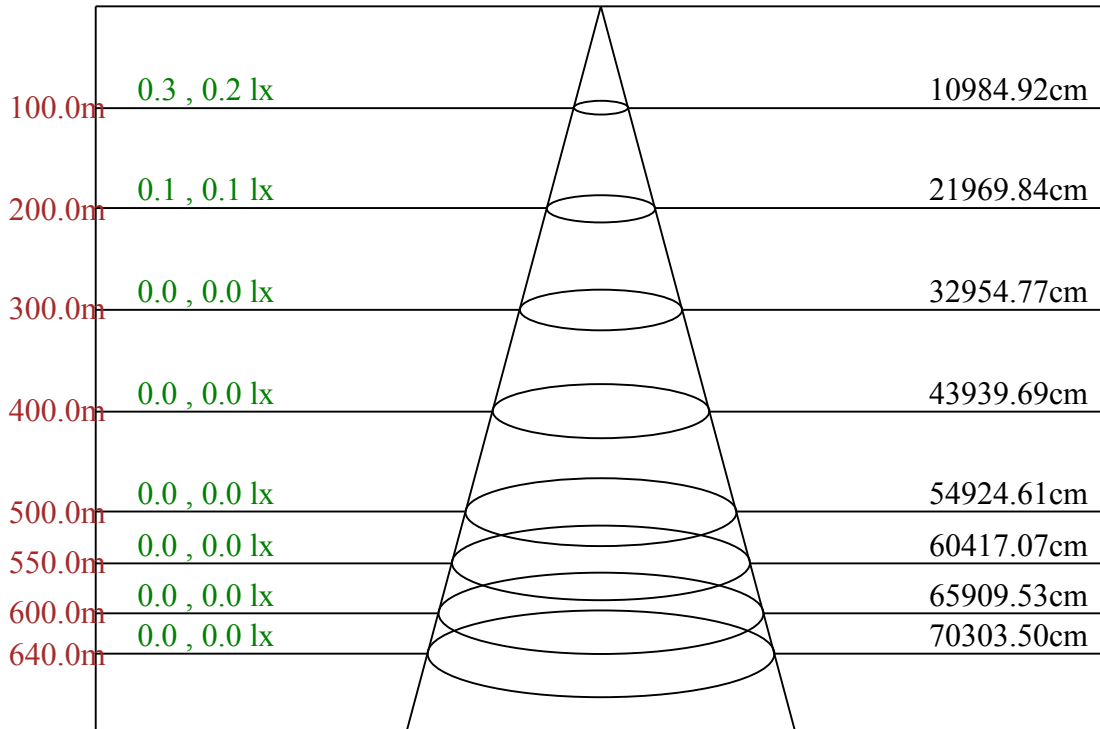
0-10	251.75
10-20	648.88
20-30	774.23
30-40	439.92
40-50	123.96
50-60	45.12
60-70	21.25
70-80	14.39
80-90	6.25
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



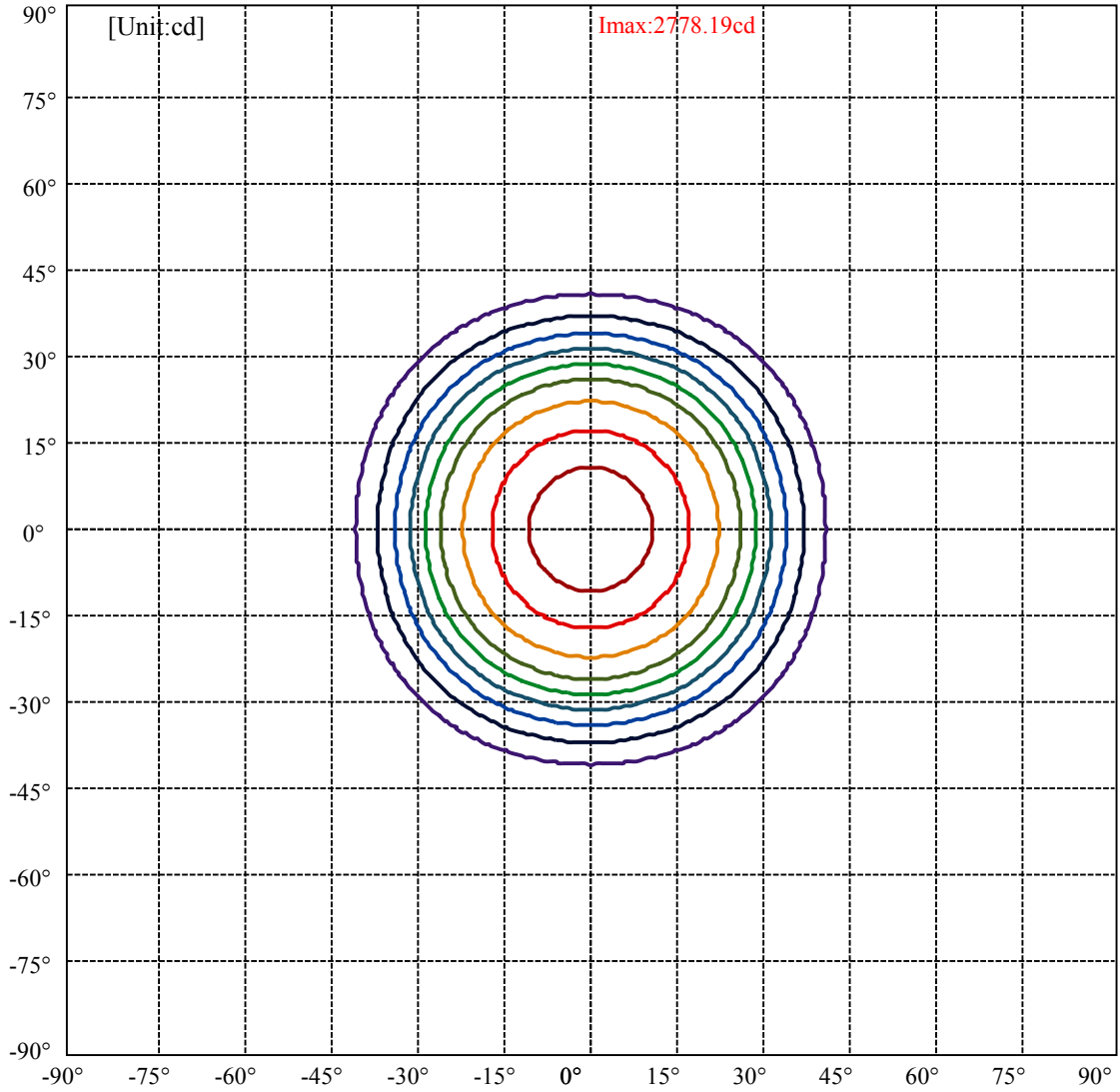
C0(Max): —————  
C0/C180: —————  
C90/C270: —————

Field angle(10%Imax):C0/180Left:40.3 Right:40.3  
:C90/270Left:40.3 Right:40.3

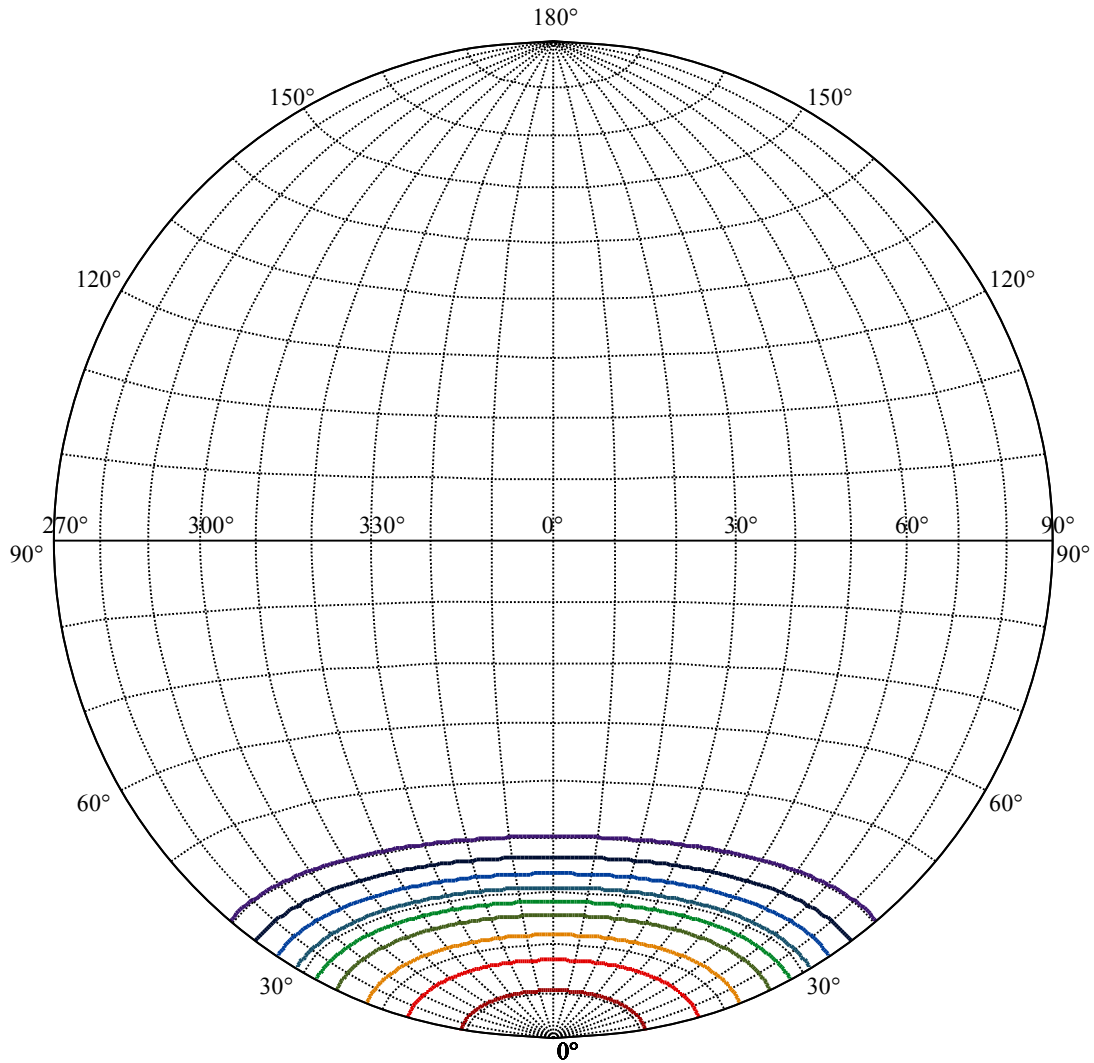
Beam Angle(50%Imax):C0/180Left:28.3 Right:28.3  
:C90/270Left:28.3 Right:28.3



Max , Ave      Beam angle of C0 plane 57.56



(10%Imax) 277.819	—
(20%Imax) 555.638	—
(30%Imax) 833.456	—
(40%Imax) 1111.28	—
(50%Imax) 1389.09	—
(60%Imax) 1666.91	—
(70%Imax) 1944.73	—
(80%Imax) 2222.55	—
(90%Imax) 2500.37	—



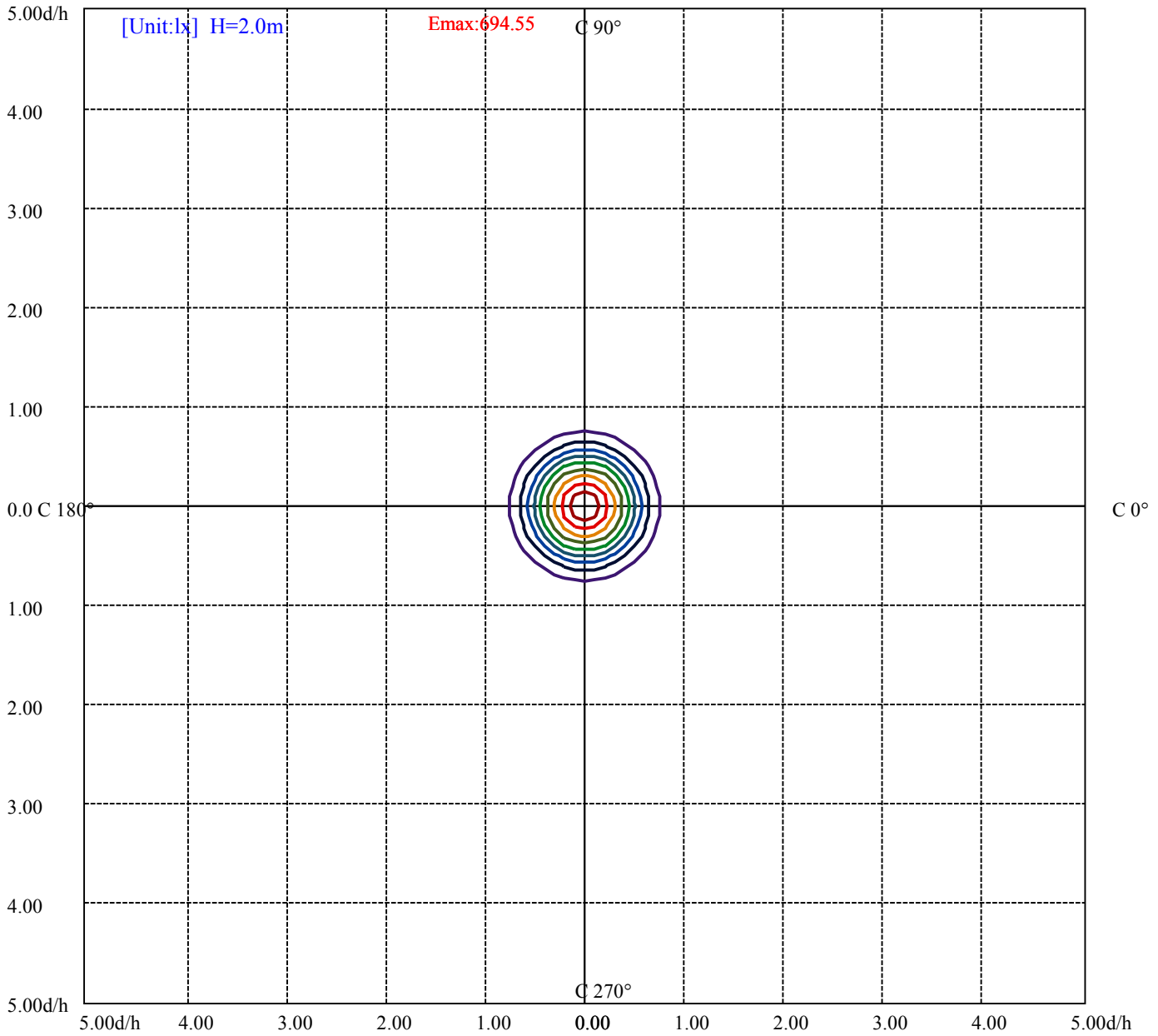
House

[Unit:cd]

Road

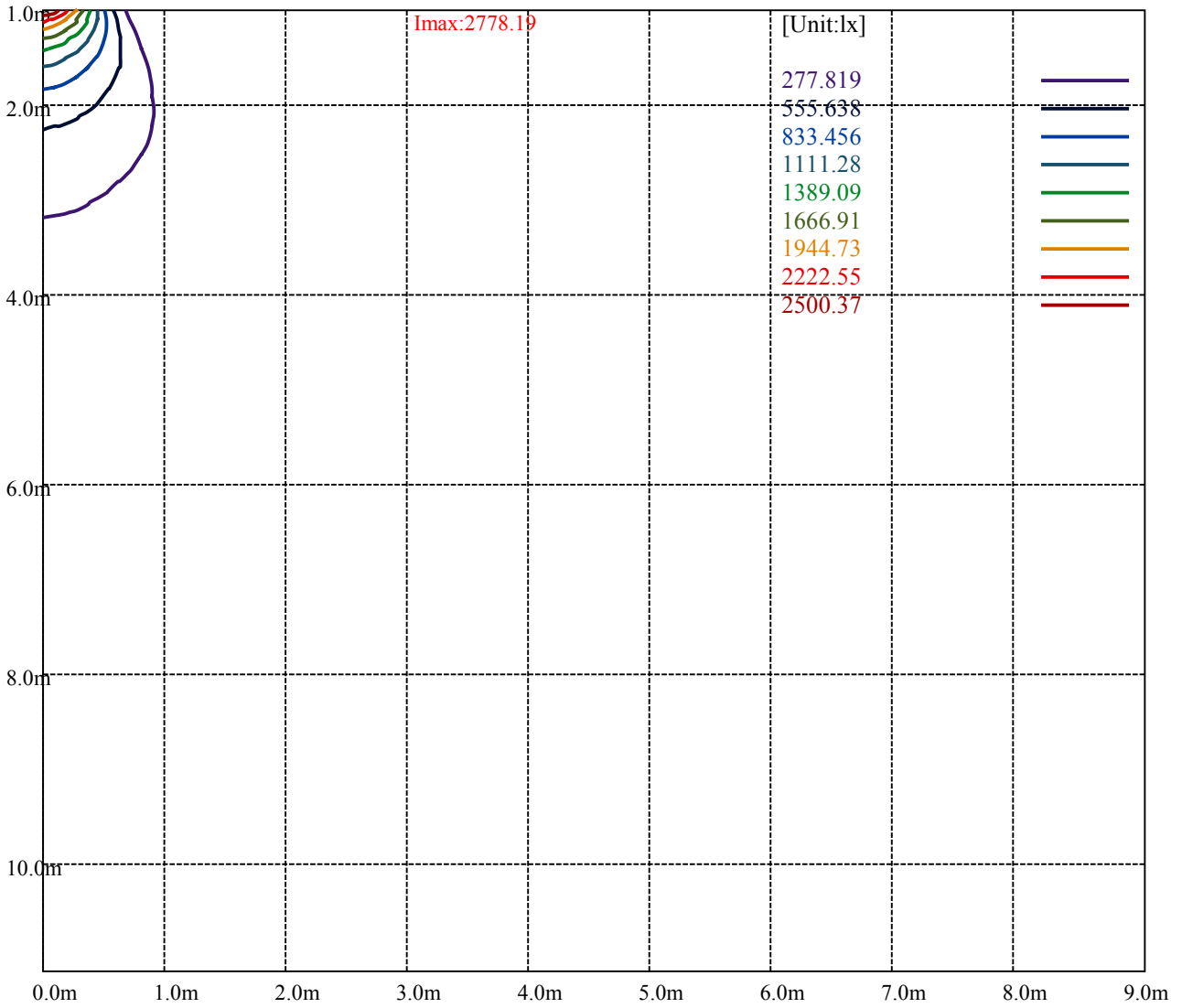
**Imax:2778.19**

(10%Imax) 277.819	—
(20%Imax) 555.638	—
(30%Imax) 833.456	—
(40%Imax) 1111.28	—
(50%Imax) 1389.09	—
(60%Imax) 1666.91	—
(70%Imax) 1944.73	—
(80%Imax) 2222.55	—
(90%Imax) 2500.37	—



- (10%Emax) 69.4545
- (20%Emax) 138.9093
- (30%Emax) 208.3638
- (40%Emax) 277.8175
- (50%Emax) 347.2725
- (60%Emax) 416.7275
- (70%Emax) 486.1825
- (80%Emax) 555.6375
- (90%Emax) 625.0925





Luminance Table

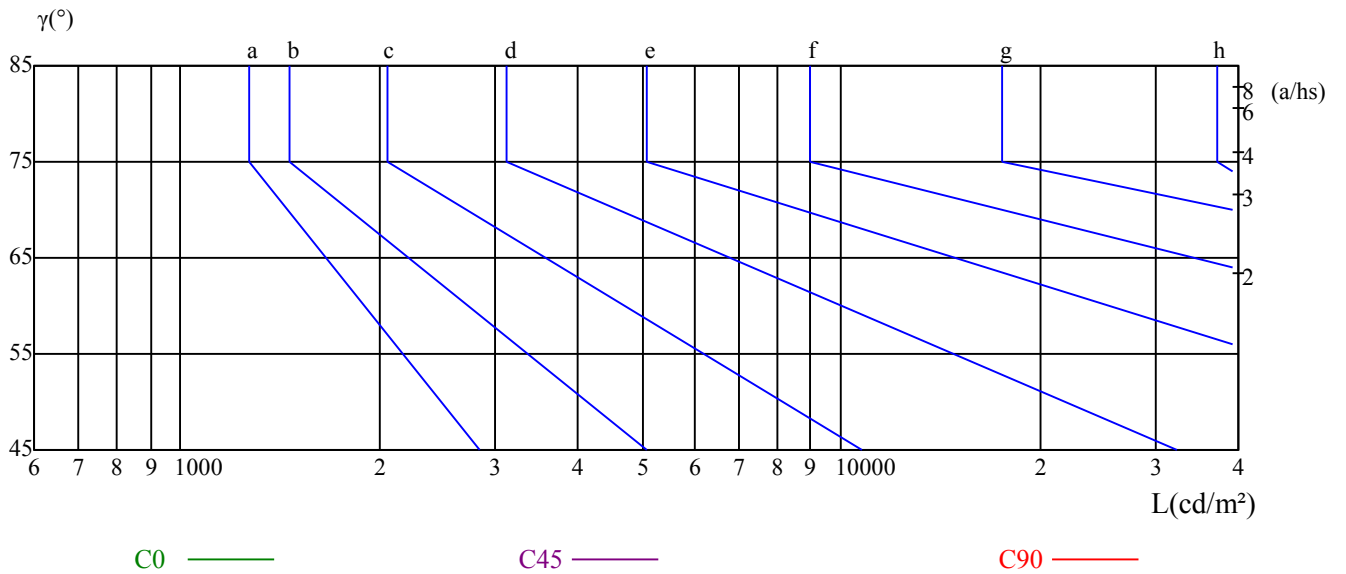
$\gamma$	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

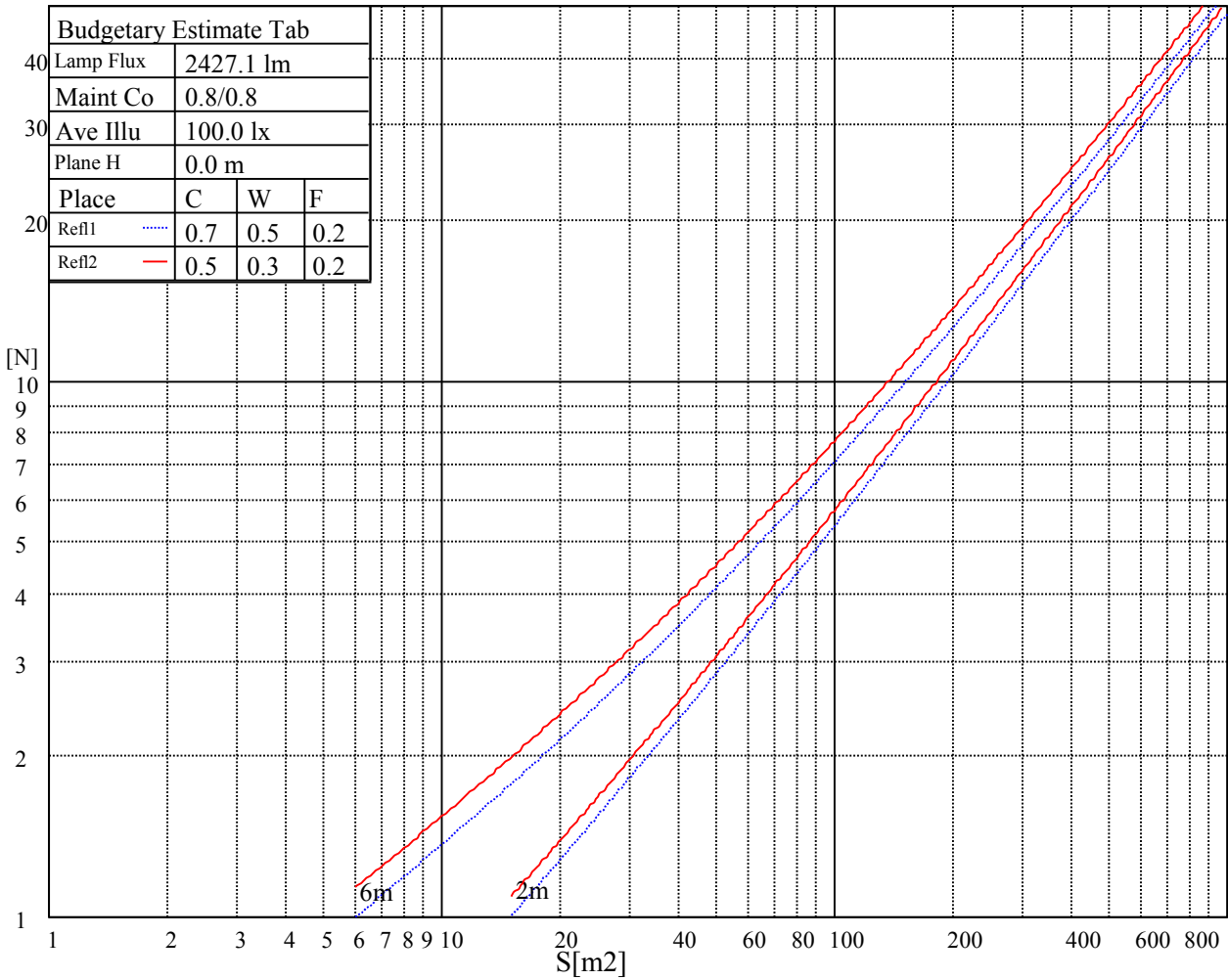
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

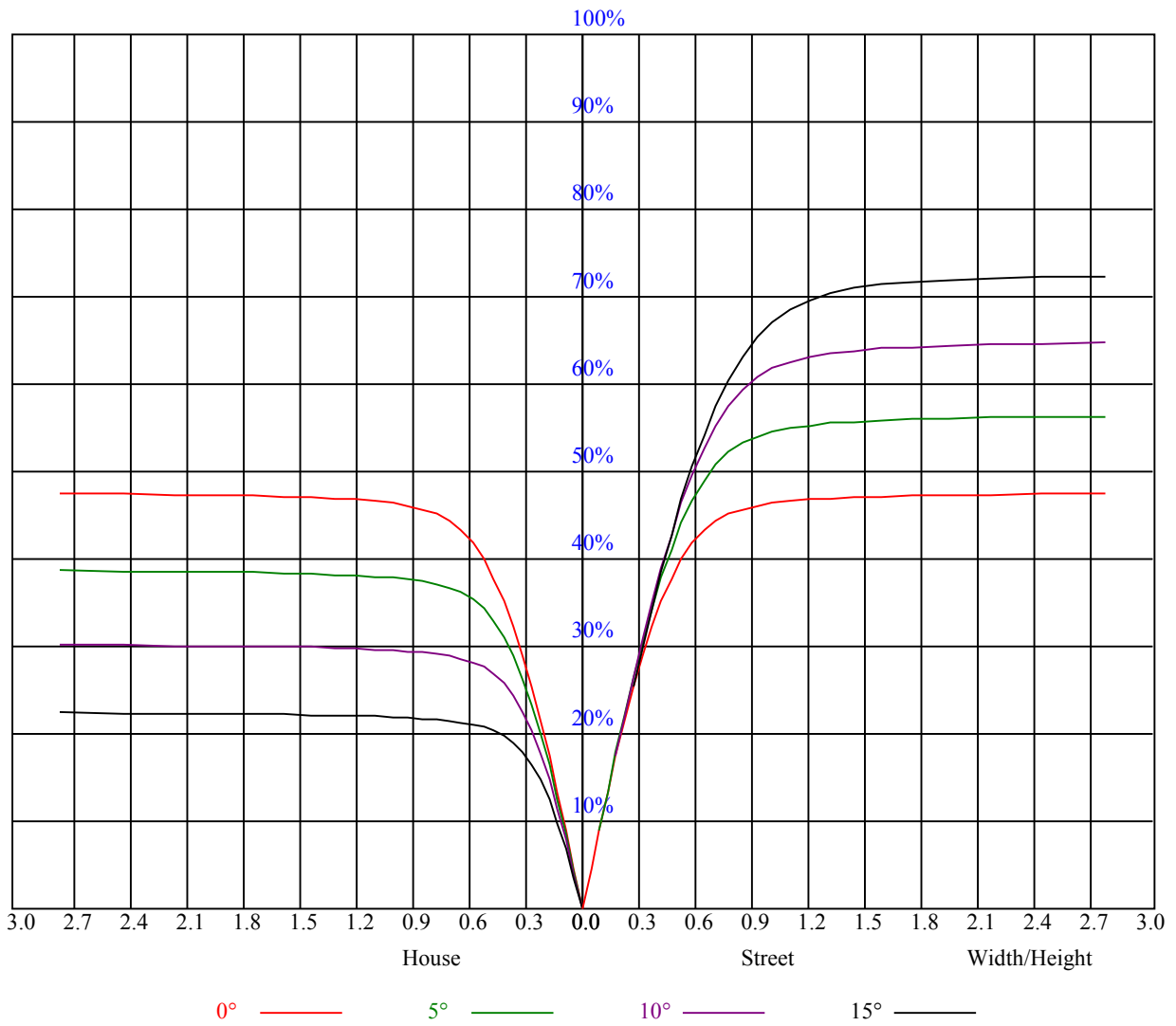
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.14	1.14	1.14	1.12	1.12	1.12	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.96
1	1.06	1.03	1.01	1.04	1.02	1.00	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.89
2	0.98	0.94	0.91	0.97	0.93	0.90	0.94	0.91	0.88	0.91	0.88	0.86	0.88	0.86	0.84	0.83
3	0.92	0.87	0.83	0.90	0.86	0.82	0.88	0.84	0.81	0.85	0.82	0.80	0.83	0.81	0.78	0.77
4	0.86	0.80	0.76	0.84	0.79	0.76	0.82	0.78	0.75	0.80	0.77	0.74	0.79	0.76	0.73	0.71
5	0.80	0.74	0.70	0.79	0.74	0.70	0.77	0.73	0.69	0.76	0.72	0.69	0.74	0.71	0.68	0.67
6	0.75	0.69	0.65	0.74	0.69	0.65	0.73	0.68	0.65	0.72	0.67	0.64	0.70	0.67	0.64	0.62
7	0.71	0.65	0.61	0.70	0.65	0.61	0.69	0.64	0.60	0.68	0.63	0.60	0.67	0.63	0.60	0.58
8	0.67	0.61	0.57	0.66	0.61	0.57	0.65	0.60	0.57	0.64	0.60	0.56	0.63	0.59	0.56	0.55
9	0.63	0.57	0.53	0.63	0.57	0.53	0.62	0.57	0.53	0.61	0.56	0.53	0.60	0.56	0.53	0.52
10	0.60	0.54	0.50	0.59	0.54	0.50	0.58	0.54	0.50	0.58	0.53	0.50	0.57	0.53	0.50	0.49



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	2763.56	2703.38	2534.06	2322.00	2088.56	1788.19	1316.25	776.25	330.19
45.0	2780.44	2731.50	2561.06	2354.63	2106.56	1797.75	1384.31	788.63	353.25
90.0	2786.63	2700.56	2536.31	2328.19	2066.63	1712.25	1105.71	635.85	243.51
135.0	2782.13	2720.81	2584.13	2394.00	2139.75	1802.25	1279.69	673.88	300.94
180.0	2763.56	2640.38	2478.94	2282.63	2056.50	1711.69	1102.05	626.85	253.46
225.0	2780.44	2643.75	2478.38	2215.13	1971.00	1671.75	1119.43	628.20	290.14
270.0	2786.63	2684.25	2545.31	2359.69	2102.63	1806.19	1284.19	699.19	286.88
315.0	2782.13	2658.94	2490.19	2284.88	2023.31	1665.56	1110.21	608.40	236.53
360.0	2763.56	2703.38	2534.06	2322.00	2088.56	1788.19	1316.25	776.25	330.19
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	168.98	95.34	52.54	31.56	19.69	14.85	12.21	11.03	10.52
45.0	185.74	102.04	57.88	36.28	24.75	19.74	17.04	15.19	10.91
90.0	119.81	63.96	38.25	26.38	18.39	14.29	11.98	11.08	10.35
135.0	117.79	65.42	40.16	26.89	18.90	14.85	11.70	11.14	10.63
180.0	132.36	79.43	47.08	29.36	18.06	13.67	11.48	11.08	10.63
225.0	153.28	88.37	53.38	32.57	20.93	16.48	13.78	14.06	11.08
270.0	137.03	75.09	45.28	31.56	22.33	17.94	15.92	13.78	10.74
315.0	117.34	65.31	38.70	25.31	17.94	13.78	11.70	11.03	10.74
360.0	168.98	95.34	52.54	31.56	19.69	14.85	12.21	11.03	10.52
C/γ(°)	90.0								
0.0	9.73								
45.0	9.68								
90.0	9.56								
135.0	9.62								
180.0	9.68								
225.0	9.79								
270.0	9.79								
315.0	9.73								
360.0	9.73								