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## Nata

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LumCAT: 3-1546-A3  
Luminaire: 99.02.73.172+92.76.365.00  
Report No: NATA0100  
Test No: GC2018082717  
LampCAT: CITIZEN CLU038  
Lamp flux(lm): 2534.0  
Number of Lamps: 1  
Length(mm): 84  
Phm Type: C

Voltage(V): 35.4000  
Current(A): 0.4900  
Power (W): 17.3460  
PF: 0.0000  
Ballast type: DC  
Width(mm): 84  
Height(mm): 0

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## Photometric Results

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Lumens(lm): 2321.87  
Efficiency(%): 91.63%  
Lumens(lm)/Power(W): 133.86  
Central intensity(cd): 8254.330  
Maximum intensity(cd): 8254.330  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=25.7  
                                  [C90/270]Total=25.7  
Field angle(10%Imax): [C0/180]Total=59.9  
                                  [C90/270]Total=59.9  
Maximum s/h(1/2): C0\_180=0.44 C90\_270=0.44  
Maximum s/h(1/4): C0\_180=0.44 C90\_270=0.44  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 93.49%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 96.739%

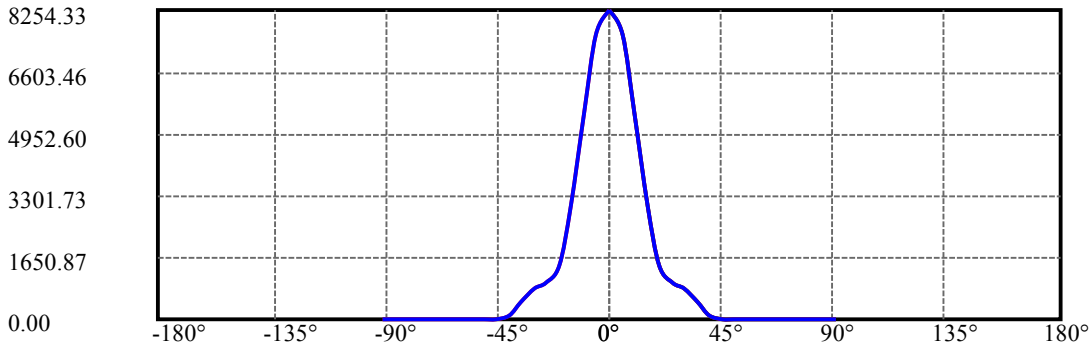
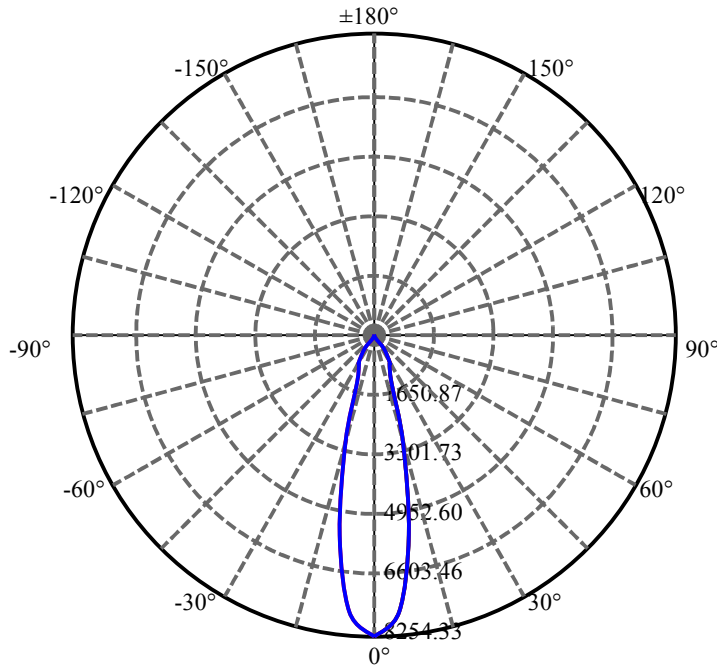
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	8254.331	49.363	49.363	1.948%	2.126%
5.0	7600.123	363.083	412.446	14.328%	17.764%
10.0	5546.588	527.941	940.387	20.834%	40.501%
15.0	3035.741	430.676	1371.063	16.996%	59.050%
20.0	1424.206	267.002	1638.064	10.537%	70.549%
25.0	955.022	221.234	1859.298	8.731%	80.078%
30.0	823.809	225.780	2085.078	8.910%	89.802%
35.0	471.778	148.326	2233.405	5.853%	96.190%
40.0	106.224	37.427	2270.831	1.477%	97.802%
45.0	15.189	5.887	2276.718	.232%	98.055%
50.0	11.686	4.907	2281.625	.194%	98.267%
55.0	11.149	5.006	2286.631	.198%	98.482%
60.0	10.825	5.139	2291.77	.203%	98.704%
65.0	10.598	5.265	2297.035	.208%	98.930%
70.0	10.454	5.385	2302.419	.212%	99.162%
75.0	10.371	5.491	2307.911	.217%	99.399%
80.0	10.282	5.550	2313.461	.219%	99.638%
85.0	10.309	5.629	2319.09	.222%	99.880%
90.0	10.144	2.780	2321.87	.110%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2085.08	82.28%	89.80%
0-40	2270.83	89.61%	97.80%
0-60	2291.77	90.44%	98.70%
0-90	2319.09	91.52%	99.88%
0-120	2319.09	91.52%	99.88%
0-180	2321.87	91.63%	100.00%
60-90	32.46	1.28%	1.40%
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%
0-24.96	1857.50	73.30%	80.00%

ZONAL LUMEN SUMMARY

0-10	940.39
10-20	697.68
20-30	447.01
30-40	185.75
40-50	10.79
50-60	10.14
60-70	10.65
70-80	11.04
80-90	5.63
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: —————

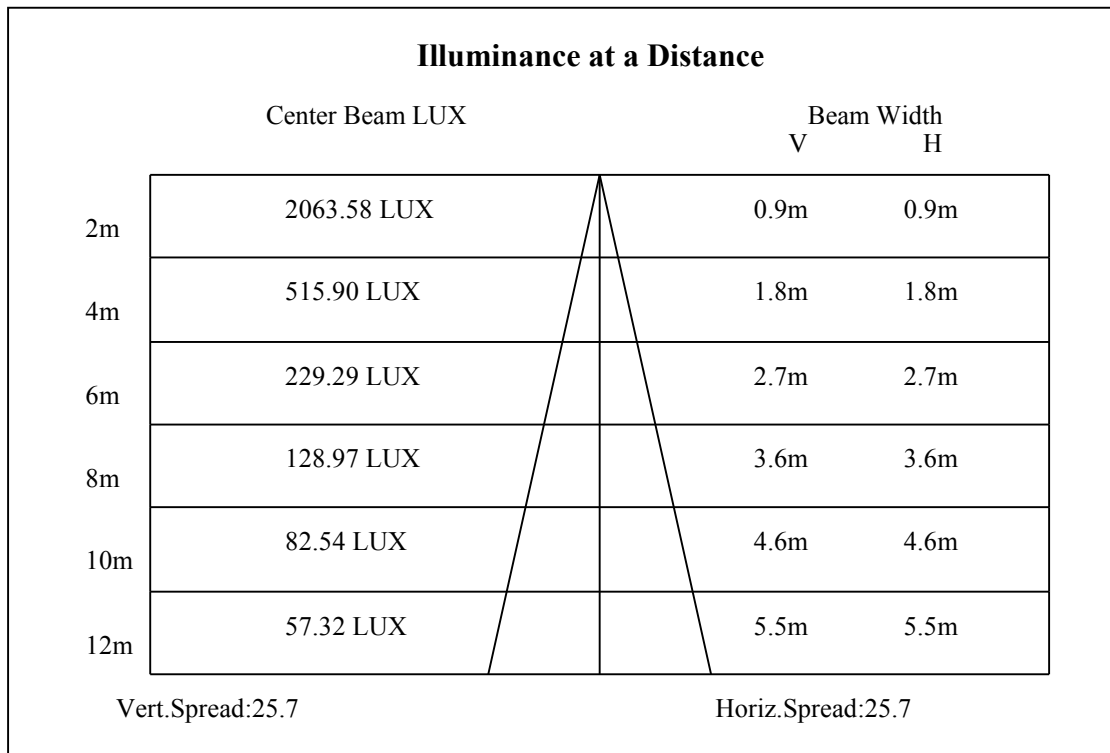
C90/C270: —————

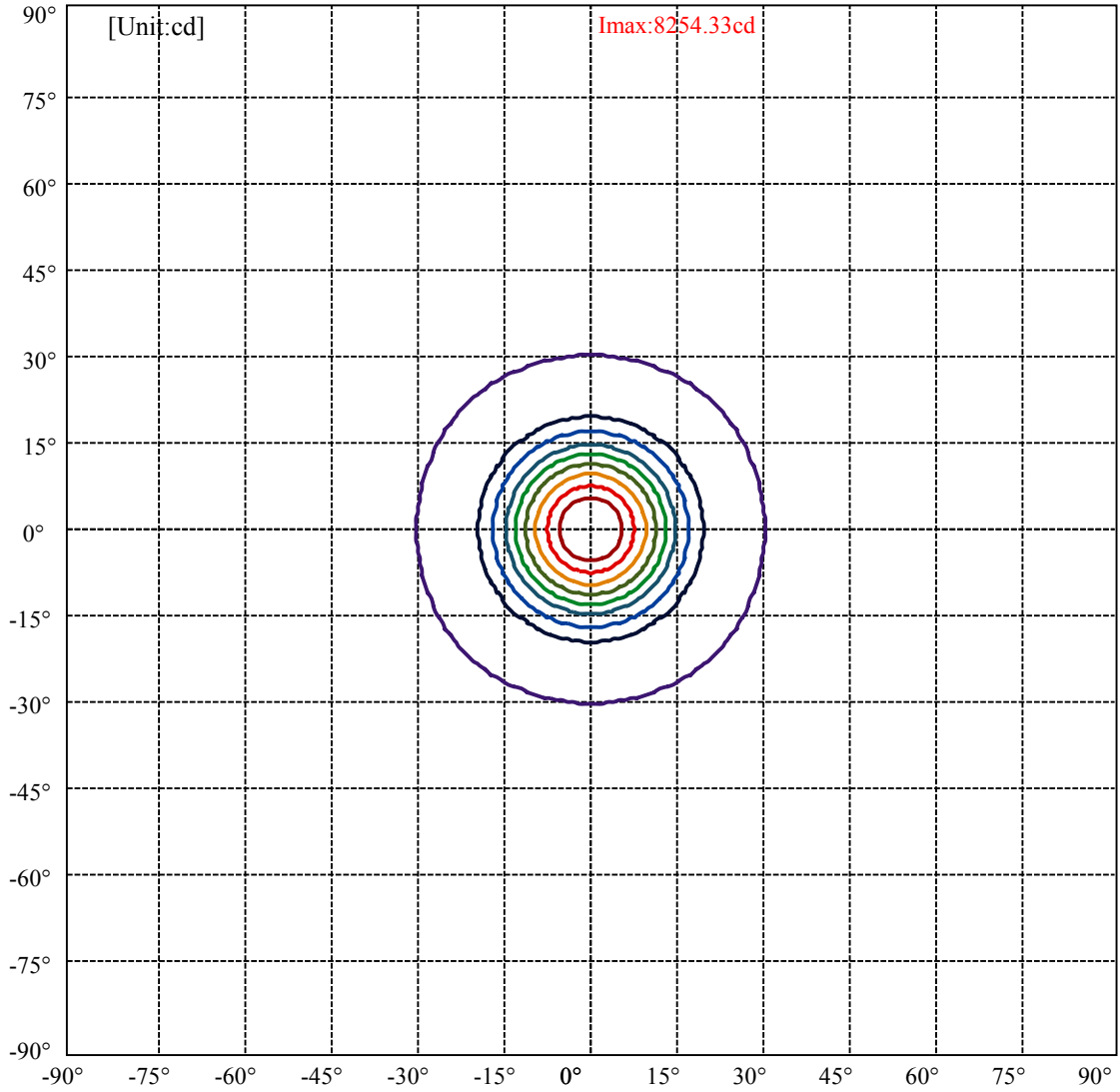
Field angle(10%Imax):C0/180Left:29.9 Right:29.9

:C90/270Left:29.9 Right:29.9

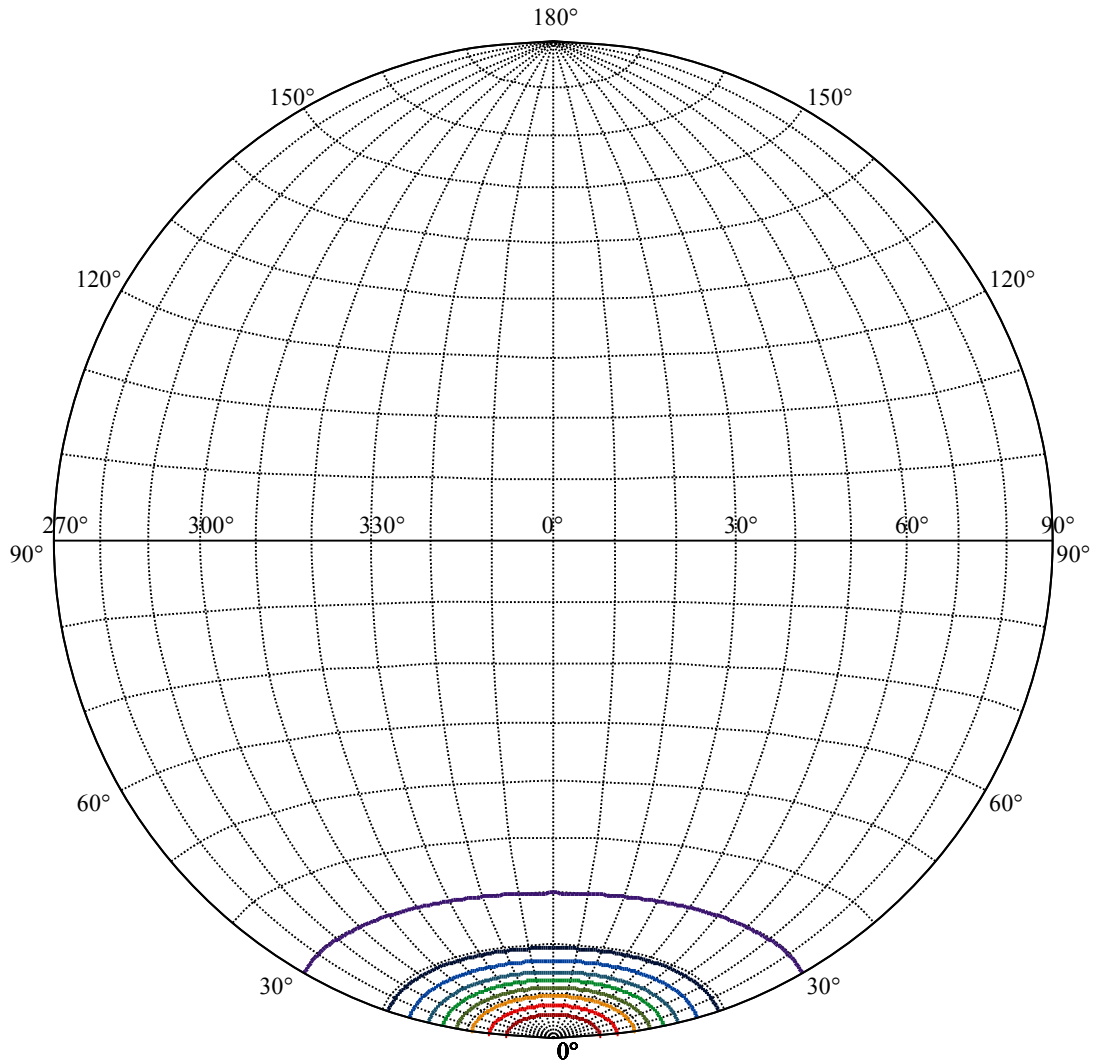
Beam Angle(50%Imax):C0/180Left:12.8 Right:12.8

:C90/270Left:12.8 Right:12.8





(10%Imax) 825.433	—
(20%Imax) 1650.87	—
(30%Imax) 2476.3	—
(40%Imax) 3301.73	—
(50%Imax) 4127.17	—
(60%Imax) 4952.6	—
(70%Imax) 5778.03	—
(80%Imax) 6603.46	—
(90%Imax) 7428.9	—



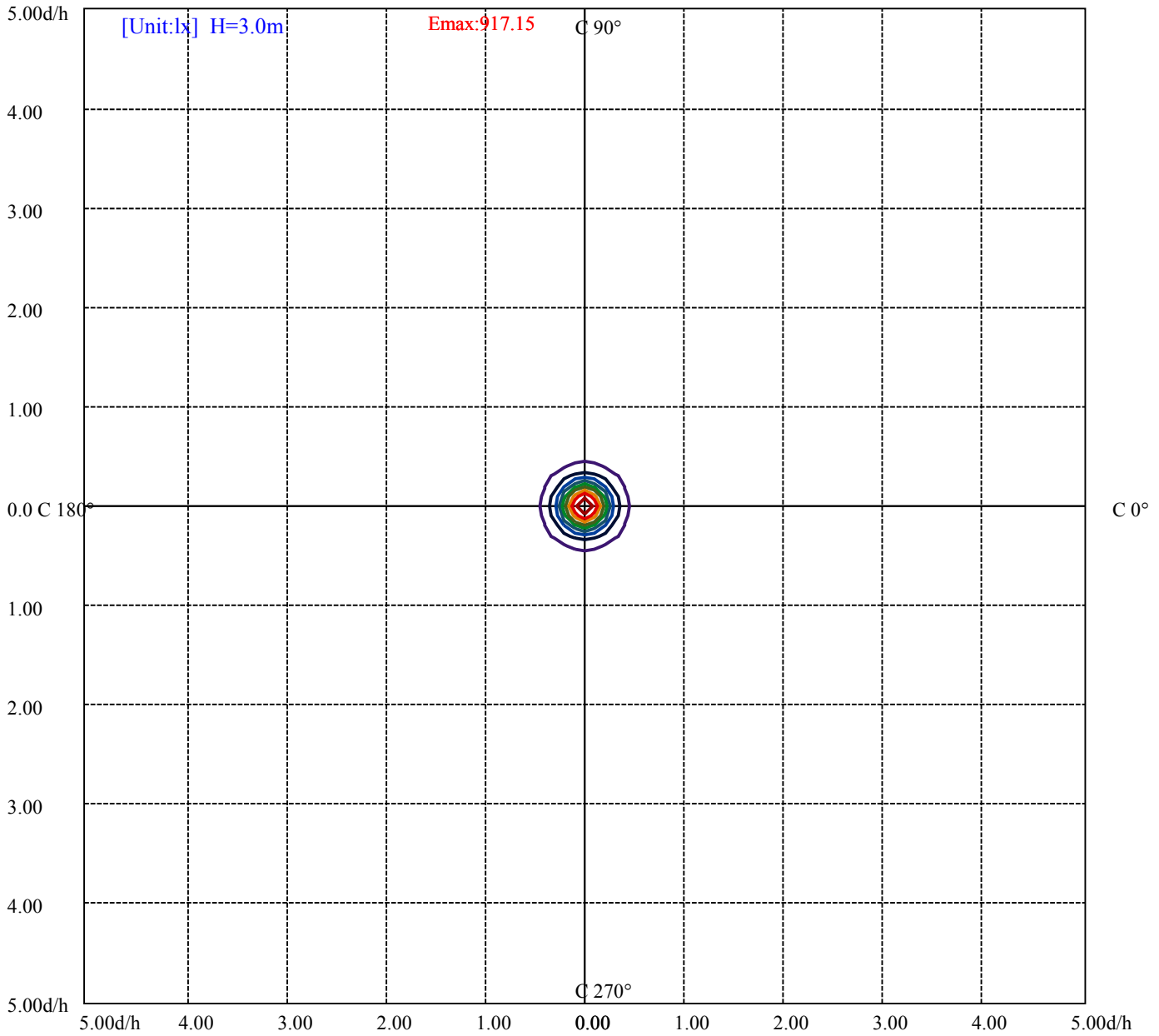
House

[Unit:cd]

Road

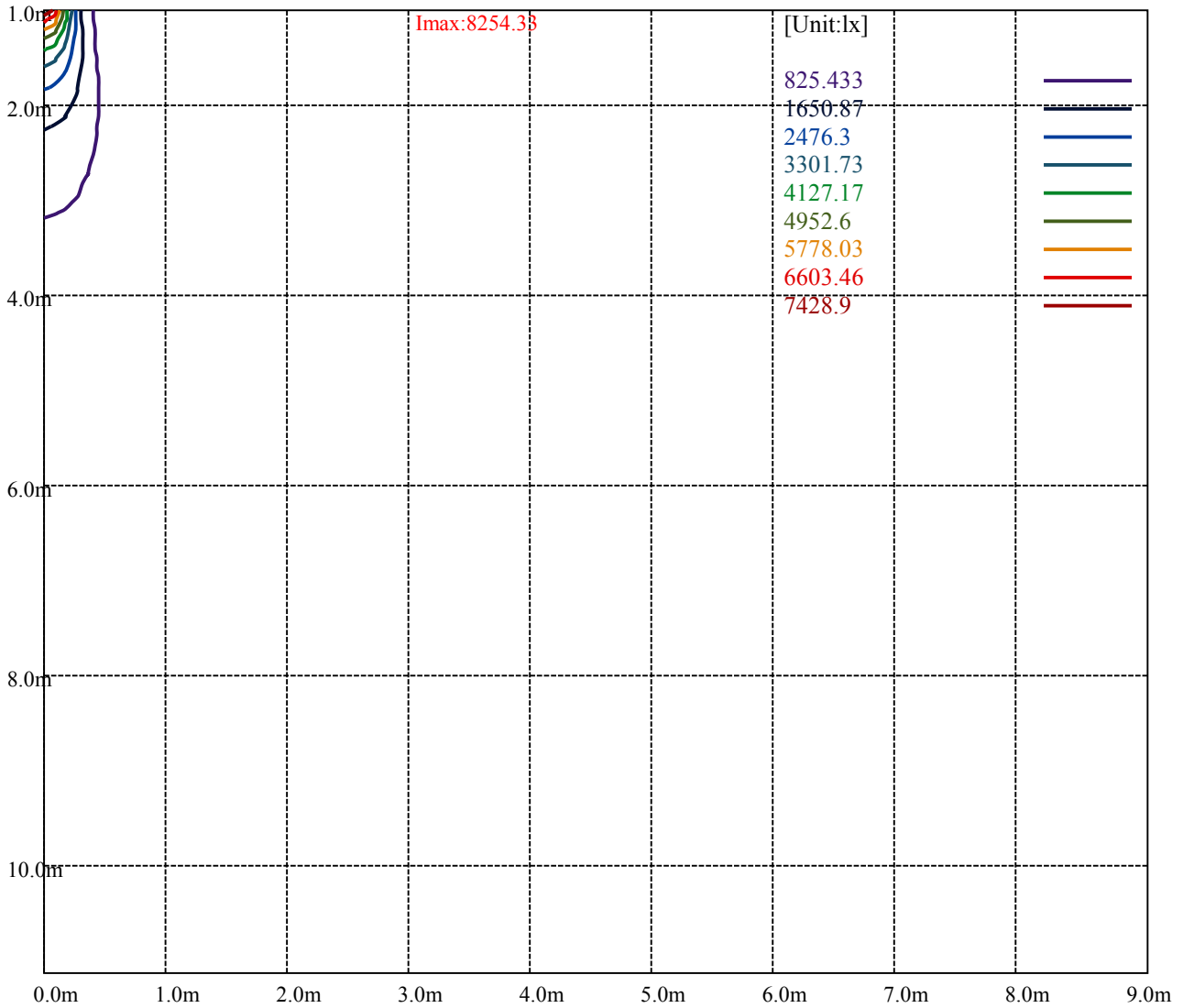
I<sub>max</sub>:8254.33

(10%I <sub>max</sub> ) 825.433	—
(20%I <sub>max</sub> ) 1650.87	—
(30%I <sub>max</sub> ) 2476.3	—
(40%I <sub>max</sub> ) 3301.73	—
(50%I <sub>max</sub> ) 4127.17	—
(60%I <sub>max</sub> ) 4952.6	—
(70%I <sub>max</sub> ) 5778.03	—
(80%I <sub>max</sub> ) 6603.46	—
(90%I <sub>max</sub> ) 7428.9	—



(10%Emax) 91.71456	—
(20%Emax) 183.4289	—
(30%Emax) 275.1433	—
(40%Emax) 366.8578	—
(50%Emax) 458.5734	—
(60%Emax) 550.2878	—
(70%Emax) 642.0022	—
(80%Emax) 733.7167	—
(90%Emax) 825.4311	—





Luminance Table

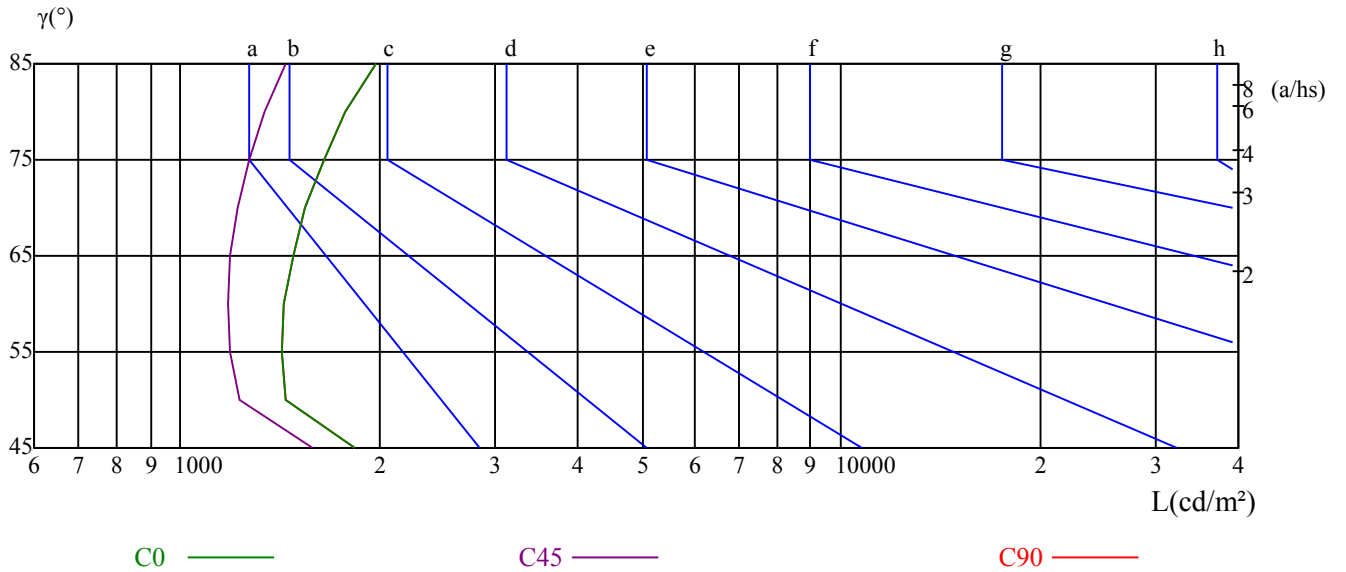
$\gamma$	45	50	55	60	65	70	75	80	85
C0	1840	1447	1424	1438	1478	1548	1649	1780	1976
C45	1581	1225	1186	1178	1190	1222	1275	1342	1447
C90	1840	1447	1424	1438	1478	1548	1649	1780	1976

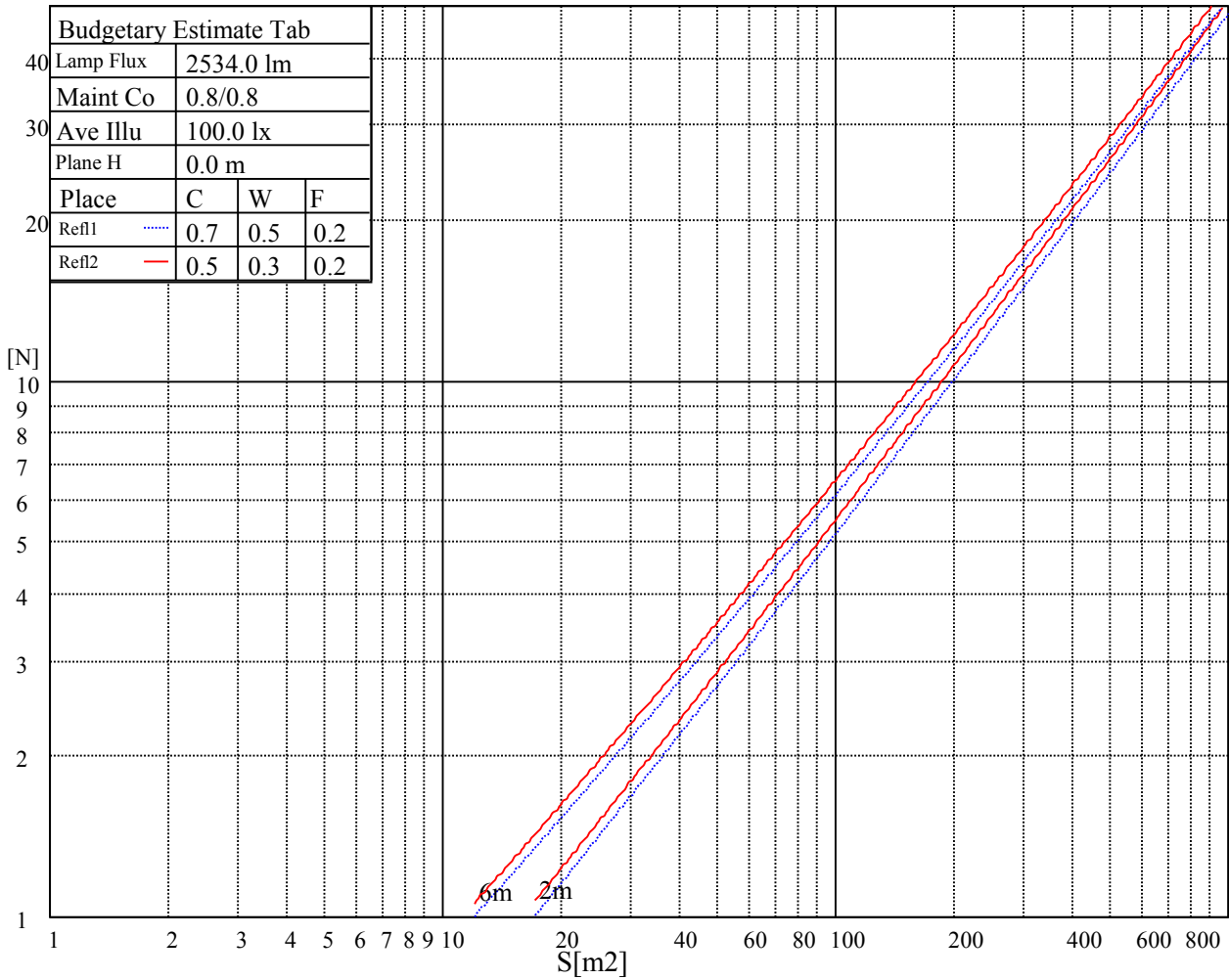
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3554	3554	3554	5679	5679	5679	16764	16764	16764

Glare Table

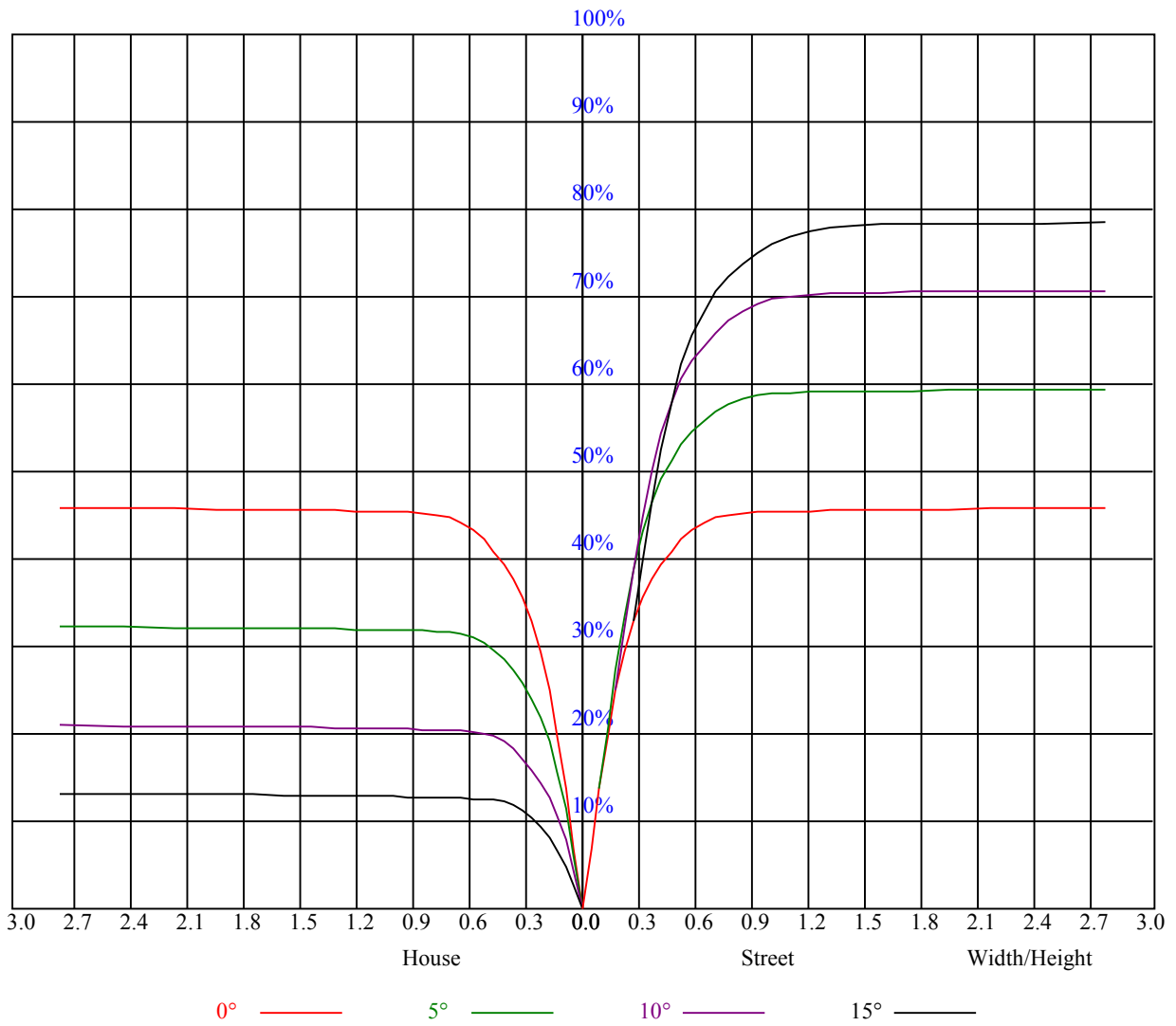
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.11	1.11	1.11	1.09	1.09	1.09	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.93
1	1.03	1.00	0.98	1.00	0.98	0.96	0.97	0.95	0.93	0.93	0.92	0.90	0.90	0.89	0.88	0.86
2	0.97	0.94	0.91	0.96	0.92	0.90	0.93	0.90	0.88	0.90	0.88	0.86	0.87	0.86	0.84	0.83
3	0.93	0.89	0.85	0.91	0.88	0.85	0.89	0.86	0.83	0.87	0.84	0.82	0.85	0.83	0.81	0.80
4	0.89	0.84	0.81	0.88	0.84	0.81	0.86	0.82	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.77
5	0.85	0.81	0.78	0.84	0.80	0.77	0.83	0.79	0.77	0.81	0.78	0.76	0.80	0.77	0.75	0.74
6	0.82	0.78	0.74	0.81	0.77	0.74	0.80	0.76	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.72
7	0.79	0.75	0.72	0.79	0.75	0.72	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.71	0.70
8	0.77	0.72	0.69	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.74	0.71	0.68	0.67
9	0.74	0.70	0.67	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.67	0.72	0.69	0.67	0.66
10	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.64



Intensity data(cd)

C/ $\gamma$ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	8243.04	7884.08	6188.89	3551.69	1698.49	1019.09	853.37	591.31	279.69
45.0	8232.58	8040.99	6388.74	3738.33	1860.36	1031.76	852.27	606.72	297.30
90.0	8271.12	7802.04	5711.00	3125.55	1563.60	957.21	824.80	522.93	67.22
135.0	8270.57	7754.14	5965.36	3319.90	1592.23	975.05	839.06	542.31	71.41
180.0	8243.04	7231.66	4768.99	2564.53	1095.13	897.86	798.10	345.75	30.50
225.0	8232.58	7228.35	4781.65	2474.23	1084.89	903.81	791.22	311.18	26.65
270.0	8271.12	7526.76	5359.19	2827.70	1423.76	936.51	820.89	454.77	37.38
315.0	8270.57	7332.96	5208.89	2684.00	1075.20	918.89	810.76	399.27	39.64
360.0	8243.04	7884.08	6188.89	3551.69	1698.49	1019.09	853.37	591.31	279.69
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	20.87	11.89	11.29	10.90	10.63	10.46	10.35	10.30	10.19
45.0	20.37	12.06	11.40	11.01	10.74	10.57	10.41	10.35	10.30
90.0	15.31	11.67	11.12	10.79	10.57	10.46	10.35	10.24	10.19
135.0	15.20	11.67	11.12	10.79	10.57	10.41	10.35	10.24	10.19
180.0	12.44	11.51	11.07	10.79	10.57	10.41	10.35	10.24	10.24
225.0	12.33	11.56	11.12	10.79	10.57	10.46	10.41	10.35	10.35
270.0	12.55	11.62	11.07	10.79	10.63	10.46	10.41	10.30	10.52
315.0	12.44	11.51	11.01	10.74	10.52	10.41	10.35	10.24	10.52
360.0	20.87	11.89	11.29	10.90	10.63	10.46	10.35	10.30	10.19
C/ $\gamma$ (°)	90.0								
0.0	10.19								
45.0	10.19								
90.0	10.13								
135.0	10.13								
180.0	10.13								
225.0	10.19								
270.0	10.13								
315.0	10.08								
360.0	10.19								